

Psychological Monographs: General and Applied

The Primary Personal Values Measured by the Allport-Vernon Test, "A Study of Values"*

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I. INTRODUCTION

Since its introduction, the Allport-Vernon test, *A Study of Values*, has attracted widespread interest among psychologists. A number of authors have reported the relations of the value scores to each other and to other variables. Few, if any, have concerned themselves with the factors accounting for the internal relations among the test items. Many psychologists would consider this latter problem basic to the determination of the relationship between values and other variables. If the measures employed overlap or intercorrelate considerably, confusion in the interpretation of values in relation to other measures appears likely. It is the purpose of the present investigation to determine the primary traits necessary to account for the intercorrelations of 60 items of this test. Such an analysis should add to our understanding of personal values in general and have some significance for the study of interest and personality traits.

The manual accompanying the first edition of the test reported high correlation between several of the value scores, thus suggesting that these measures were probably not independent and that they

presumably measure to a considerable extent common value tendencies. Since that time other investigators have verified the correlation originally reported between these measures. Duffy and Crissy (2) reported the isolation of three factors from the correlations between the various value scores. However, the first and most extensive factor study of the Allport-Vernon test was that of Lurie (5). Lurie, being somewhat critical of the multiple-choice structure of the Allport-Vernon test items, constructed a similar test whose constituent items gave an indication of degree of evaluation without requiring a choice between several objects of evaluation. Twenty-four variables were employed in the analysis, each variable being the sum of several items. Of the seven factors necessary to account for the intercorrelations of these 24 variables, four were regarded by Lurie as meaningful. The six original evaluative types, namely the aesthetic, religious, social, economic, political, and theoretic, were reduced to four by the disappearance of the aesthetic evaluative dimension and the combination of the political and economic types.

II. DESCRIPTION OF VARIABLES

Basic to the construction of the Allport-Vernon test is Spranger's theory that men are best known through a study of their subjective values. Spranger pro-

*The opinions expressed are those of the author, and do not necessarily reflect the official viewpoint of the Department of the Army.

posed a sixfold classification of such values as follows: the *theoretical*, the *economic*, the *social*, the *political*, and the *religious*.

The test of values developed by Allport and Vernon (1) consists of a number of questions based upon a variety of familiar situations, to which 2 alternative answers (in Part I) and 4 alternative answers (in Part II) are provided. There are 120 alternative answers in all, 20 referring to each of the six values. Subjects are instructed to mark the alternative answers in Part I according to degree of preference and to rank answers in Part II in order of their choices.

Sample questions are given below with responses of a hypothetical subject.

Part I. Question 1.

The main object of scientific research should be the discovery of pure truth rather than its practical applications.

		(a)	(b)
(a) Yes	(b) No	3	0

Part II. Question 14. (Women have an alternative form of this question.)

If you should marry (or are married) do you prefer a wife who—

- | | |
|----------|--|
| <u>4</u> | a. can achieve social prestige, commanding admiration from others; |
| <u>1</u> | b. likes to stay at home and keep house; |
| <u>2</u> | c. is fundamentally spiritual in her attitude toward life; |
| <u>3</u> | d. is gifted along artistic lines. |

It can be seen from the nature of the items that the test scores give the *relative* prominence of the several values types.

Split-half reliabilities reported by the authors (7) range from .49 for the "social" scale to .84 for the "aesthetic" and "religious" scales. Test-retest reliabilities range from .39 for the "social" scale to .84 for the "aesthetic" scale.

Although it was desired that the present study be as comprehensive as possible, 30 possible variables were excluded from the analysis in order that compu-

tational labor might be kept within reasonable bounds. In the first section of 30 items, where the subject is instructed to choose between 2 alternative statements or to accept or reject a single statement, each item was considered a single variable. In the second section of 4 alternative items, each alternative can be considered a separate variable, making a possible total of 60 variables for this section. In this latter section, the 4 alternatives of each item have forced negative intercorrelations. In order to reduce such forced negative correlation to a minimum, the first 2 alternatives of each 4 alternative items were discarded. The variables for the present analysis were thus confined to the 30 items of Section 1, and to 30 of the 60 item alternatives in Section 2 of the Allport-Vernon test.

The variables are listed with their numbering in the present analysis and with an indication of the value they were designated as measuring in the scoring key provided with the test of values. The letters A, R, E, P, S, and T are used to show the manner of scoring and are abbreviations for, respectively, *aesthetic*, *religious*, *economic*, *political*, *social*, or *theoretic* personal values. Since the last 30 variables are alternatives of four-choice items which were to be ranked in order of preference, all four alternatives must be shown in order to describe fully the variable. For example, one item in Part II calls for the ranking of four persons according to the subject's interest in them. The ranking assigned one of these four persons constitutes a variable of the factor analysis. It is listed as follows: "Florence Nightingale interests and attracts him more than Napoleon, Henry Ford, or Charles Darwin"—this is listed as our item No. 55, below. The letters "S vs. P, E, T" following item

No. 55 indicate that choice of Florence Nightingale was scored as social, while the three alternative choices were scored, respectively, as political, economic, or theoretic.

It was convenient in the factor analysis to reverse the sign of certain of the variables. When this was done, the statement of the variable was altered to conform with the sign reversal. The reversed statement of the sample item given above would read: "Napoleon, Henry Ford, or Charles Darwin interests or attracts him more than Florence Nightingale."

The variables of the analysis are listed below:

1. He believes that the main object of scientific research should be the discovery of pure truth rather than its practical applications. (T vs. E)¹

2. He believes that it is justifiable for the great artists such as Beethoven to be selfish and negligent of the feelings of others. (A vs. S)

3. He does not believe that because of the aggressive and self-assertive nature of man, the abolition of war is an illusory ideal. (R vs. P)

4. If he were a university professor and had the necessary ability, he would prefer to teach poetry rather than chemistry and physics. (A vs. T)

5. He would prefer to teach economics rather than law. (E vs. P)

6. He considers unselfishness and sympathy more desirable character traits than high ideals and reverence. (S vs. R)

7. In a paper such as the *New York Sunday Times*, he is more interested in the section on picture galleries than in the real-estate section and the account of the stock market. (A vs. E)

8. He does not think that a person who analyzes his emotions is apt to be less sincere in his feeling than one who is not so reflective. (T vs. S)

9. He should prefer to read the headlines "Protestant Leaders To Consult On Reconciliation" rather than "Great Improvements In Market Conditions." (R vs. E)

10. He would prefer to read the story "Physicists Make Important Discoveries Concerning

The Structure Of Atoms" rather than "Threat To Constitutional Government In Germany By A Dictator." (T vs. P)

11. When he visits a cathedral, he is more impressed by the architectural features and stained glass than by a pervading sense of reverence and worship. (A vs. R)

12. He does not believe that contemporary charitable policies should be curtailed because they tend to undermine individual initiative. (S vs. P)

13. He believes that the evidence that has been impartially accumulated goes to show that the universe has evolved to its present state in accordance with mechanistic principles, so that there is no need to assume a first cause, cosmic purpose, or God behind it. (T vs. R)

14. In his opinion, general progress has been advanced more by the freeing of slaves with enhancement of the value placed on individual life rather than by the discovery of the steam engine with the consequent industrialization and economic rivalry in American and European countries. (S vs. E)

15. If he had the opportunity, and if nothing of the kind existed in the community or college where he lived, he would prefer to found a classical orchestra rather than a debating society. (A vs. P)

16. At an exposition he prefers to see scientific apparatus or chemical products rather than automobiles. (T vs. E)

17. He would prefer to hear a series of popular lectures on the contemporary painter rather than the progress and needs of social-service work in the cities of his part of the country. (A vs. S)

18. He would prefer to hear a series of lectures on the comparative development of the great religious faiths rather than the comparative merits of the forms of government in Britain and in the United States. (R vs. P)

19. If he had some time to spend in a waiting room, and there were only two magazines to choose from, he would read *Arts and Decorations* rather than *The Scientific American*. (A vs. T)

20. He would encourage his children to have vocational training rather than to make several teams. (E vs. P)

21. He feels that the aim of the churches at the present time should be to bring out charitable tendencies, and to urge people to think more of the good of others, rather than to convey spiritual worship and a sense of communion with the highest. (S vs. R)

22. He feels that our modern industrial and scientific developments are not signs of a greater degree of civilization and culture than those attained by any previous race, such as the Greeks. (A vs. E)

¹ The letters A, R, E, P, S, and T are employed to indicate that the item is, in the Allport-Vernon test, scored, respectively, as a measure of Aesthetic, Religious, Economic, Political, Social, or Theoretic value.

23. If he were waiting in a strange living room, he would be more apt to judge the owner's knowledge and intellectuality as shown by the books in his bookcases than his friendliness and hospitality as shown by the photographs on the walls and the general comforts of the room. (T vs. S)

24. He feels that the world would not be a much better place if we took to heart the teaching, "Lay not up for yourselves treasures upon earth . . . but lay up for yourselves treasures in heaven, where neither moth nor rust doth corrupt, and where thieves do not break through nor steal." (E vs. R)

25. He is more interested in reading accounts of the lives and works of such men as Aristotle, Plato, and Socrates than of Alexander, Julius Caesar, and Charlemagne. (T vs. P)

26. Taking the Bible as a whole, he would prefer to regard it from the point of view of its beautiful mythology and literary style rather than as a spiritual revelation. (A vs. R)

27. He does not believe that since the class or social status to which a man belongs depends mainly upon his push and ability, it is just that a small proportion of the population should be very rich. (S vs. P)

28. If he were to choose a topic on which to write an essay, he would choose the defects of our present educational systems rather than the role of church-going in religion. (T vs. R)

29. If he were to choose a topic on which to write an essay, he would prefer the personality of some close friend of his rather than the necessities of life, luxuries, and savings. (S vs. E)

30. When witnessing a gorgeous ceremony (ecclesiastical or academic, induction into office, etc.) he is more impressed by the color and pageantry of the occasion itself rather than by the unified idea or institution which the group represents. (A vs. P)

31. He believes that good government should aim at more aid for the poor, sick, and old; rather than the development of manufacturing and trade, introduction of more ethical principles into its policies and diplomacy, or the establishing of a position of prestige and respect among nations. (S vs. E, P, R)

32. He believes that good government should aim at more aid for the poor, sick, and old, the introduction of more ethical principles into its policies and diplomacy, or the establishment of a position of prestige and respect among nations; rather than the development of manufacturing and trade. (S, P, R vs. E)

33. He believes that a man who works in business for his living all the week can best spend Sunday in trying to educate himself by reading serious books; rather than by trying to win at golf or racing, going to an orchestral

concert, or hearing a really good sermon. (T vs. P, R, A)

34. He believes that a man who works in business all week can best spend Sunday in trying to educate himself by reading serious books, going to an orchestral concert, or hearing a really good sermon; rather than by trying to win at golf or racing. (R, A, T vs. P)

35. If he could influence the educational policies of the public schools of some city, he would undertake to promote the study and the performance of drama; rather than to develop cooperativeness and the spirit of service, to provide additional laboratory facilities, or to promote school savings banks for education in thrift. (A vs. T, E, S)

36. If he could influence the educational policies of the public schools, he would undertake to promote the study and the performance of the drama, to provide additional laboratory facilities, to promote school savings banks for education in thrift; rather than to develop cooperativeness and the spirit of service. (A, T, E vs. S)

37. He would prefer a friend of his own sex who is seriously interested in thinking out his attitude toward life as a whole, one who possesses qualities of leadership and organizing ability, one who shows refinement and emotional sensitivity; rather than one who is efficient, industrious, and of a practical turn of mind. (S, P, R vs. E)

38. He would prefer a friend of his own sex who is seriously interested in thinking out his attitude toward life as a whole; rather than one who is efficient, industrious, and of a practical turn of mind, one who possesses qualities of leadership and organizing ability, or one who shows refinement and emotional sensitivity. (R vs. S, P, E)

39. If he lived in a small town and had more than enough income for his needs, he would prefer to use it to endow the church to which he belonged, give it to a university for the development of scientific research, devote it to hospitals; rather than apply it productively to industrial development. (T, S, R vs. E)

40. If he lived in a small town and had more than enough income for his needs, he would prefer to apply it productively to industrial development, give it to a university for the development of scientific research, devote it to hospitals; rather than use it to endow the church to which he belongs. (T, S, E vs. R)

41. When he goes to the theatre, he enjoys most, as a rule, the ballet or similar imaginative performances, plays with a theme of human suffering and love, problem plays that argue consistently for some point of view; rather than plays that treat the lives of great men. (T, A, S vs. P)

42. When he goes to the theatre, he enjoys most, as a rule, ballet or similar imaginative performances; rather than plays that treat the lives of great men, plays with a theme of human suffering and love, or problem plays that argue consistently for some point of view. (A vs. T, S, P)

43. Assuming that he had the necessary ability and that the salary for each of the following occupations was the same, he would prefer to be a mathematician; rather than a sales manager, clergyman, or politician. (T vs. E, R, P)

44. Assuming that he had the necessary ability and that the salary for each of the following occupations was the same, he would prefer to be a mathematician, clergyman, politician; rather than a sales manager. (T, R, P vs. E)

45. If he had unlimited leisure and money, he would prefer to make a collection of fine sculptures or paintings; rather than establish a mental hygiene clinic for taking care of the maladjusted and mentally deficient, aim at a senatorship or a seat in the Cabinet, or enter into banking and high finance. (A vs. S, P, E)

46. If he had unlimited leisure and money, he would prefer to establish a mental hygiene clinic for taking care of the maladjusted and mentally deficient; rather than make a collection of fine sculptures or paintings, aim at a senatorship or a seat in the Cabinet, or enter into banking and high finance. (S vs. A, P, E)

47. At an evening discussion with intimate friends of his own sex, he is most interested when they talk about philosophy and psychology, literature, socialism and social amelioration; rather than the meaning of life. (T, A, S vs. R)

48. At an evening discussion with intimate friends of his own sex, he is most interested when they talk about philosophy and psychology; rather than the meaning of life, literature, or socialism and social amelioration. (T vs. A, S, R)

49. During his next summer vacation he would prefer to write and publish an original biological essay or article; rather than stay in some secluded part of the country where he could appreciate fine scenery, go in for a local tennis or other athletic tournament, or get experience in some new line of business. (T vs. E, A, P)

50. During his next summer vacation he would prefer to stay in some secluded part of the country where he could appreciate fine scenery; rather than write and publish an original biological essay or article, go in for a local tennis or other athletic tournament, or get experience in some new line of business. (A vs. T, E, P)

51. Great exploits and adventures of discovery

such as Lindbergh's and Byrd's seem significant because they add to our knowledge of mechanics, geography, meteorology, etc., because they weld human interests and international feelings throughout the world, or because they contribute to the ultimate revelation of the meaning of the universe; rather than because they represent conquests by man over the difficult forces of nature. (T, S, R vs. P)

52. Great exploits and adventures of discovery such as Lindbergh's and Byrd's seem significant to him because they add to our knowledge of mechanics, geography, meteorology, etc.; rather than because they represent conquests by man over the difficult forces of nature, because they weld human interests and international feelings throughout the world, or because they contribute to the ultimate revelation of the meaning of the universe. (T vs. S, R, P)

53. He believes that one should guide one's conduct according to, or develop one's chief loyalties toward, one's ideals of beauty, one's business organizations and associates, society as a whole; rather than toward one's religious faith. (A, E, S vs. R)

54. He believes that one should guide one's conduct according to, or develop one's chief loyalties toward, one's ideals of beauty; rather than one's religious faith, one's business organizations and associates, or society as a whole. (A vs. E, S, R)

55. Florence Nightingale interests and attracts him more than Napoleon, Henry Ford, or Charles Darwin. (S vs. P, E, T)

56. Florence Nightingale, Henry Ford, or Charles Darwin interests and attracts him more than Napoleon. (S, E, T vs. P)

57. He would prefer, if he were to marry, a wife who would like to stay at home and keep house, one who is fundamentally spiritual in her attitude toward life, one who is gifted along artistic lines; rather than one who can achieve social prestige commanding admiration from others. (A, S, R vs. P)

58. He would prefer, if he were to marry, a wife who could achieve social prestige commanding admiration from others, one who is fundamentally spiritual in her attitude toward life, one who is gifted along artistic lines; rather than one who likes to stay at home and keep house. (A, R, P vs. S)

59. He would like to think of Leonardo da Vinci's "The Last Supper" as one of the most priceless and irreplaceable pictures ever painted, in relation to Leonardo's versatility and its place in history, as a masterpiece of design; rather than as one expressing the highest spiritual tendencies and emotions. (E, T, A vs. R)

60. He would like to think of Leonardo da Vinci's picture "The Last Supper" as expressing the highest spiritual tendencies and emotions, in

relation to Leonardo's versatility and its place in history, as a masterpiece of design; rather than as one of the most priceless and irreplaceable pictures ever painted. (R, T, A vs. E)

III. POPULATION

The subjects of the present study were 200 male students of the University of Illinois. The limitation to one sex was imposed because of the probability that males would differ from females not only in the magnitude of their evaluative tendencies but also in the interrelations of such tendencies. The test papers used were those of students who had been tested in 1936 and 1937 as a part of a regular class exercise during a course in social psychology.

IV. PROCEDURE

Tetrachoric intercorrelations between each of the 60 variables were computed and the resulting matrix subjected to a centroid analysis. After the extraction of eleven centroid factors, the residuals were symmetrically distributed and had a standard deviation of .08. This may be compared with the standard error of .11 of a tetrachoric correlation of zero with a median split of both variables. Rotation of the centroid factors to an oblique simple structure was next accomplished.

The intercorrelations of the primary traits were then determined. Since a number of these correlations appeared significantly high, the matrix formed by variables involved in such significant correlations was factored and the resulting centroid factors rotated orthogonally into a simple structure. Factors III, IX, and X were excluded from this analysis for the reason just mentioned, that is, their correlations with other primary traits were quite low. Factor XI was also not included since it is residual in nature.

Loadings of the 60 original variables on these second-order factors were then calculated.

In arriving at the general factor solution presented as Table 6, a number of alternatives were investigated and discarded as being less meaningful than the one here presented. Throughout the investigation of these alternative solutions, the factor pattern showed little change with respect to variables with loadings above .4. Variables with loadings between .2 and .4 could be made to vary above and below the arbitrary level of significance, namely .30. This lack of rigidity in the simple structure is evident in the literature on factor analyses in nearly all fields other than abilities. Its effect will probably be greatest in loadings on the second-order factors.

Since the reader may feel, in considering some of the following discussion of the individual primary traits, that an undue amount of detailed discussion is devoted to the relation between individual variables and the primary traits of this and Lurie's analysis, the reasons for this emphasis will be indicated. The author believes that the identification of a primary trait is an extremely tentative process, at least with limited information at present available, and even more so that the identification of two primary traits emerging from different analyses as identical must depend upon something more than similarity between names attached to measures subjected to factor analysis. It has been shown a number of times that questionnaires purporting to measure the same thing intercorrelate negligibly. A detailed comparison of variables with high loadings on the factors in question is, consequently, desirable before statements regarding identity or similarity of factors are made.

From each of the columns of Table 6, the primary-trait matrix, a list of those variables with loadings greater than .30 has been prepared. *These are the basic definitions of the nature of each factor.* In the present instance, with so little known concerning primary traits in evaluative tendencies, most readers will prefer to arrive at their own interpretations of the individual factors by examining these lists. The writer has, however, attempted to assemble all evidence which may be of aid in this interpretation and to develop those hypotheses which

seem to him most fruitful. Because of the difficulty in selecting a single word which conveys exactly the meanings necessary to define the configuration of loadings, the significance of the names assigned these factors should be minimized. Names will be employed as symbols referring to the list of traits or to hypotheses concerning these lists.

V. RESULTS

A. GENERAL

The centroid matrix is presented as Table I; the transformation from the centroid to the primary-trait matrix as Table 2; the cosines between the perpendiculars to the hyperplanes defining the primary traits as Table 3; the correlations between the factors as Table 4; the loadings of the first order on the second order factors as Table 5; and the loadings of the variables on the primary traits as Table 6. Table 6 includes the loadings of the variables on the second-order factors, *A*, *B*, and *C*. The variables of the analysis are designated by arabic numbering, rotated factors by roman numerals, and the centroid factors by roman numerals with the prime symbol.

B. THE FIRST-ORDER FACTORS

Factor I: General Aesthetic Interest

Variable 17. Loading, .66. He would prefer to hear a series of popular lectures on the contemporary painter rather than on the progress and needs of social-service work in the cities of his part of the country.

Variable 45. Loading, .66. If he had unlimited leisure and money, he would prefer to make a collection of fine sculptures or paintings; rather than to establish a mental hygiene clinic for taking care of the maladjusted and mentally deficient, aim at a senatorship or a seat in the Cabinet, or enter into banking and high finance.

Variable 18. Loading, .60. He would prefer to hear a series of lectures on the comparative development of the great religious faiths rather than on the comparative merits of the forms of government in Britain and in the United States.

Variable 36. Loading, .54. If he could influence the educational policies of the public schools, he would undertake to promote the study and the performance of the drama, to provide ad-

ditional laboratory facilities, to promote school savings banks for education in thrift, rather than to develop cooperativeness and the spirit of service.

Variable 35. Loading, .50. If he could influence the educational policies of the public schools of some city, he would undertake to promote the study and the performance of drama; rather than to develop cooperativeness and the spirit of service, to provide additional laboratory facilities, or to promote school savings banks for education in thrift.

Variable 50. Loading, .49. During his next summer vacation he would prefer to stay in some secluded part of the country where he could appreciate fine scenery; rather than to write and publish an original biological essay or article, go in for a local tennis or other athletic tournament, or get experience in some new line of business.

Variable 19. Loading, .49. If he had some time to spend in a waiting room and there were only two magazines to choose from, he would read *Arts and Decorations* rather than *The Scientific American*.

Variable 29. Loading, .42. If he were to choose a topic on which to write an essay, he would prefer the personality of some close friend of his rather than the necessities of life, luxuries, and savings.

Variable 57. Loading, .42. He would prefer, if he were to marry, a wife who would like to stay at home and keep house, one who is fundamentally spiritual in her attitude toward life, one who is gifted along artistic lines; rather than one who can achieve social prestige commanding admiration from others.

Variable 42. Loading, .36. When he goes to the theatre, he enjoys most, as a rule, ballet or similar imaginative performances; rather than plays that treat the lives of great men, plays with a theme of human suffering and love, or problem plays that argue consistently for some point of view.

Variable 4. Loading, .33. If he were a university professor and had the necessary ability, he would prefer to teach poetry rather than chemistry and physics.

Variable 41. Loading, .33. When he goes to the theatre, he enjoys most, as a rule, the ballet or similar imaginative performances, plays with a theme of human suffering and love, problem plays that argue consistently for some point of view; rather than plays that treat the lives of great men.

Variable 54. Loading, .33. He believes that one should guide one's conduct according to, or develop one's chief loyalties toward, one's ideals of beauty; rather than one's religious faith, one's business organizations and associates, or society as a whole.

TABLE I
THE CENTROID MATRIX*

Variable	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	h**
1	097	-064	-123	067	113	107	-184	079	141	158	140	162
2	281	-135	-226	-181	221	255	-239	136	-077	051	-098	389
3	365	093	195	059	-182	061	-096	051	-407	271	-255	536
4	268	-410	-258	-161	-164	-308	-256	143	-286	080	109	640
5	114	125	117	-073	263	155	-040	-064	-134	054	-182	201
6	132	261	-262	058	-163	246	285	-175	146	-207	-339	536
7	340	-312	082	-237	-298	237	-261	-088	-135	224	055	568
8	233	056	028	-212	-180	-174	207	036	183	-079	-061	253
9	164	-474	248	-268	-317	193	-153	-065	094	-283	161	665
10	073	273	343	-074	229	222	334	-227	069	059	140	496
11	186	422	-246	-136	-200	-018	-039	120	-124	-102	241	432
12	307	-119	-065	271	-396	275	060	208	-090	-107	205	527
13	225	412	-283	254	222	026	-233	312	-181	-212	-028	645
14	243	-291	236	032	-295	105	182	316	-130	195	057	490
15	135	-066	037	-140	101	340	-183	-196	123	133	-281	353
16	446	245	153	-234	265	078	025	131	131	-225	168	527
17	517	-063	-076	-541	302	177	045	060	125	098	-267	794
18	354	-442	376	-389	092	-014	140	-067	-171	-224	-261	794
19	285	-430	-288	067	-133	-259	-089	-110	-089	134	-327	591
20	143	052	020	098	-073	141	057	093	170	074	-297	193
21	251	560	-132	-032	-408	295	139	134	256	-038	-166	780
22	358	-134	-178	083	021	138	-207	167	174	-082	054	315
23	420	089	-044	-223	052	-158	-044	081	137	-049	063	297
24	184	438	-231	-089	050	-208	-173	-262	-130	-081	199	494
25	565	053	297	198	211	-248	-095	108	-180	-027	-082	616
26	543	547	-250	037	220	097	-189	102	-101	-079	115	792
27	408	-146	-033	421	-202	053	-088	086	188	154	-117	498
28	071	483	-294	062	-157	-102	-192	-044	115	179	122	463
29	386	-094	289	-240	-015	-228	286	158	-133	-156	-186	539
30	021	152	-131	-198	-232	299	193	-161	-127	-154	039	328
31	544	-144	-089	296	-230	-088	111	-111	-089	029	067	511
32	242	-418	193	143	-364	106	176	-109	012	082	202	525
33	302	-073	128	321	374	-224	251	-253	403	092	139	723
34	348	-334	323	213	122	082	141	232	131	081	131	519
35	465	-188	-367	-281	-125	-242	-149	-238	-054	096	220	679
36	157	-249	-280	-423	198	-235	111	-313	342	207	164	735
37	531	-136	-152	226	135	-196	130	220	-105	096	-178	549
38	442	-143	123	446	145	-111	400	209	-158	-161	103	728
39	378	-275	297	092	-126	172	-182	-140	129	-196	291	553
40	402	596	-468	109	152	095	138	-144	-131	052	124	855
41	538	009	-096	181	-127	-111	144	-135	-092	049	-191	446
42	412	250	-080	-177	143	-124	121	-187	-151	371	-059	519
43	493	123	129	209	160	145	-322	-088	195	140	-012	454
44	564	-294	146	115	140	-043	-164	-017	-062	233	080	552
45	666	-282	081	-262	097	-119	-035	021	046	034	-216	673
46	434	108	446	133	-107	079	123	-103	-094	-302	129	577
47	449	020	-110	-276	-093	-142	-178	417	281	161	149	652
48	090	260	218	-197	-102	-238	-124	350	162	-226	148	466
49	563	136	156	092	182	-156	085	314	072	109	230	602
50	136	-414	-219	-272	070	122	029	-162	-017	-058	-147	384
51	235	209	358	086	-182	-183	-079	-060	188	196	-109	397
52	139	173	255	116	-165	-102	-036	-250	208	287	070	360
53	165	668	-544	110	167	169	145	-213	-093	054	131	933
54	750	-058	-132	076	250	130	118	-075	-273	160	184	822
55	317	-317	378	237	-219	-066	-155	-217	-234	-337	-034	693
56	279	090	488	333	218	-105	-199	-119	-252	-300	-179	733
57	388	-516	-146	182	111	-097	-102	-216	185	-288	-258	734
58	211	-174	222	-144	265	-228	190	220	-332	222	254	576
59	350	456	-092	-235	-119	023	138	-064	-100	171	-043	473
60	042	-169	-279	336	222	-110	080	211	207	-269	-114	462

* Decimals properly preceding each entry have been omitted.

** Communalities.

TABLE 2
THE TRANSFORMATION MATRIX*

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI
I'	463	325	086	313	265	174	054	264	239	-016	255
II'	-338	-103	-194	541	332	-230	159	-263	384	-062	057
III'	-243	-037	039	-532	466	-047	510	-045	158	-215	117
IV'	-564	-137	-200	-028	207	286	-010	526	-224	126	-032
V'	013	185	268	-074	-075	-520	375	042	-289	287	-455
VI'	-158	476	-251	-061	-186	262	568	-014	-365	-477	-018
VII'	244	-658	-227	-047	-491	-173	189	526	-003	007	130
VIII'	-241	219	-312	-460	-145	-366	038	463	550	-305	-403
IX'	-027	300	-347	-215	-368	089	329	086	328	649	424
X'	025	056	301	-236	-153	-394	-043	169	-204	-318	589
XI'	-389	173	648	001	-317	409	320	238	227	-092	-047

* Decimals properly preceding each entry have been omitted.

All but four of the aesthetic variables (on the original scale of values) are significantly loaded on Factor I. Consequently, Factor I may be regarded with considerable confidence as aesthetic in nature.

Variables 2, 7, 15, and 26 purport to measure aesthetic evaluative tendencies but are not loaded on Factor I. Since the loading of Variables 2, 7, and 15 are, from Table 1, .246, .281, and .214, respectively, it would appear that their absence from the above listing can be plausibly attributed to sampling error. The loading of -.021 of Variable 26 does indicate some discrepancy between the content of Factor I and aesthetic evaluation as conceived by the authors

of the test.

Variables 18 and 29 are loaded on Factor I although they apparently lack aesthetic content. Subjectively, however, they appear to reveal emotional or appreciative tendencies which might be expected in persons aesthetically inclined. Variables 36 and 57 while not primarily aesthetic have, respectively, as an alternate choice "teaching drama" and "choosing a wife gifted along artistic lines." These alternatives were assumed to be adequate explanation of their loading on Factor I.

The absence of a clearly defined aesthetic factor in Lurie's results is difficult to explain. In order that this problem may be more closely analyzed, each of the variables of Lurie's analysis which were intended as measures of an aesthetic

TABLE 3
THE COSINE MATRIX*

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI
I	1.000	-.089	036	215	-.147	-.165	-.329	-.146	-.113	159	236
II		1.000	110	-.121	021	180	359	-.125	084	-.093	-.037
III			1.000	061	-.005	064	-.021	-.107	-.188	-.113	000
IV				1.000	230	220	-.317	-.349	-.027	156	033
V					1.000	033	-.145	-.388	068	-.152	-.065
VI						1.000	030	011	-.062	040	160
VII							1.000	166	051	-.097	010
VIII								1.000	131	-.051	018
IX									1.000	090	033
X										1.000	057
XI											1.000

* Decimals properly preceding each entry have been omitted.

TABLE 4
THE INTERCORRELATIONS OF THE PRIMARY FACTORS*

	II	III	IV	V	VI	VII	VIII	IX	X	XI
I	-.116	-.001	-.186	.233	.277	.312	.088	.120	-.086	-.208
II		-.113	.149	-.002	-.253	-.357	.225	-.162	.076	.108
III			-.050	.054	-.024	.042	.061	.165	.112	-.008
IV				-.139	-.302	.142	.262	-.064	-.111	.061
V					.014	.137	.367	-.110	.203	-.004
VI						.068	-.128	.138	-.064	-.239
VII							-.059	.032	.017	-.116
VIII								-.180	.102	.004
IX									-.126	-.090
X										.001

* Decimals properly preceding each entry have been omitted.

primary trait, namely, Variables 9, 10, 11, and 12 will be discussed in relation to the variables in the present analysis.

Variable 9 in Lurie's analysis is the sum of the scores on the following items: desire to teach modern poetry, to read about art, to read the *Saturday Review*, to have one's son spend his spare time in joining a poetry society, to endow a symphony orchestra, and to listen to a lecture on architecture in relation to the other arts. These various component items might be related to Variables 4, 19, 15, and 17 of the present study although interest in literature as well as interest in other phases of art is indicated in *Variable 9*. This variable would probably be loaded on Factor I if it had been included in the present analysis. The component items in *Variable 10* of Lurie's analysis are as follows: liking for the occupations of musician or portrait painter, tendency to encourage his child to seek a career in literature, and desire to be considered a connoisseur and artistic and talented. No variables in the present analysis resemble any of the items comprising *Variable 10*. *Variable 11* of Lurie's analysis consists of the following items: interest in Michelangelo, Beethoven, Homer, and Edna St. Vincent Millay; liking for the company of people who are

interested in beautiful things; and desire to marry someone who is sensitive and talented. Here again no variables of the present analysis closely resemble any of these component items. *Variable 12* of Lurie's analysis is the sum of the scores of the following items: belief that scientific research should try to make the world more beautiful, that education should teach people to be alive to beauty, that good government should foster the arts, that a good argument against war is that it is dirty and hideous, that a white-collar worker should spend Sunday in attending museums and concerts, that the world needs to replace the ugliness in the world by new beauty. Since *Variable 12* contains no components which resemble variables high upon Factor I and since, also, it appears to involve a tendency toward social reform, it is understandable that this variable will not correlate with an aesthetic factor.

In spite of the absence of resemblance between individual items, Lurie's Variables 10 and 11 appear subjectively to measure much the same attributes which are measured by those variables high upon Factor I except, possibly, for the occupational emphasis in *Variable 10* which is not apparent in Factor I. If it could be maintained that persons interested in things aesthetic

TABLE 5
LOADING OF THE PRIMARY TRAITS ON THE SECOND-ORDER GENERAL FACTORS
(AFTER ROTATION)*

	Primary Trait	A	B	C
I	Aesthetic Evaluative Tendency	.366	.465	.168
II	Interest in Fine Arts	-.599	.162	-.138
IV	Antireligious Evaluative Tendency	-.091	-.074	-.683
V	Antiaggression	.060	.614	.017
VI	Humanitarian Evaluative Tendency	.281	.077	.474
VII	Interest in Science	.641	.114	-.274
VIII	Liberalism	-.245	.573	-.266

* Decimals properly preceding each entry have been omitted.

TABLE 6
THE ROTATED FACTORIAL MATRIX*

Variable	I'	II'	III'	IV'	V'	VI'	VII'	VIII'	IX'	X'	XI'	A	B	C
1	-.075	.319	.112	-.050	-.105	.036	.087	.090	-.018	.022	.041	-.249	.033	-.085
2	.240	.451	.064	.002	-.028	-.085	.009	-.054	-.119	-.129	-.146	-.261	.185	-.131
3	.126	.012	.009	.074	.462	-.089	-.144	.000	-.047	-.471	.106	-.084	.450	-.038
4	.333	.121	.160	.024	.014	.091	-.522	.049	.056	-.111	-.070	-.390	.227	.294
5	.084	.096	.010	.062	.190	-.209	.158	-.134	-.154	-.110	-.067	.085	.120	-.200
6	.197	-.148	-.500	.401	-.051	.112	-.011	-.034	-.049	.128	.140	.218	-.000	-.242
7	.281	.304	.238	-.063	.093	.276	-.053	-.110	-.098	-.371	.291	-.042	.287	.319
8	.286	-.107	-.137	.072	-.047	-.013	-.044	.041	.326	.131	.204	.166	.147	.011
9	.199	.290	.078	-.234	-.023	.501	.117	-.113	.067	-.089	.065	.234	.182	.567
10	-.051	-.080	.066	.019	-.014	-.083	.554	.018	-.038	-.056	.161	.514	.033	-.311
11	-.051	.050	.043	.435	.052	.098	-.094	-.066	.363	-.150	-.039	-.149	-.084	-.338
12	-.110	.143	-.129	.017	-.020	.471	.029	.380	.124	-.301	.044	-.119	.303	.071
13	-.232	.210	-.134	.376	.273	-.096	-.063	.071	.186	-.020	-.418	-.447	.126	-.548
14	.070	.022	-.024	-.365	-.048	.076	.050	.409	.127	-.414	.158	-.010	.407	.253
15	.214	.322	-.086	.003	.073	-.020	.151	-.244	-.267	-.035	.187	.072	.100	.011
16	.110	.300	.044	.136	.090	-.043	.403	.020	.371	.055	-.103	.144	.284	-.382
17	.660	.372	-.017	.066	-.094	-.324	.161	-.103	.050	.044	.102	.086	.348	-.225
18	.596	-.005	.049	-.210	.158	.065	-.081	-.067	-.069	-.067	.433	.499	.344	
19	.486	-.051	.027	.076	.046	.044	-.558	.076	-.216	.141	.167	-.234	.323	.287
20	.070	.067	-.343	-.044	.043	-.064	.050	.099	.029	.001	.170	-.023	.188	-.054
21	-.017	.082	-.550	.350	.037	.098	.114	-.002	.399	-.119	.319	.025	.030	-.361
22	.067	.425	-.051	.036	-.034	.195	.038	.163	.109	.074	-.023	-.275	.271	-.057
23	.267	.190	.079	.162	.047	-.042	.008	.010	.334	.133	.081	-.047	.252	-.172
24	.022	-.007	.276	.606	.223	.064	-.155	-.287	.133	.124	.000	-.061	-.116	-.388
25	.089	.078	.118	.040	.505	-.108	.029	.199	.175	-.006	-.061	-.067	.671	-.188
26	-.021	.343	.055	.578	.273	-.033	.101	.009	.259	-.051	-.124	-.267	.246	-.724
27	.000	.201	-.191	-.419	.112	.237	-.063	.368	.032	.036	.300	-.252	.469	.048
28	-.162	.080	.022	.019	.078	.027	-.150	-.119	.230	.062	.224	-.294	-.190	-.356
29	.420	-.187	-.070	-.083	.166	-.182	-.016	.127	.277	-.055	-.020	.275	.479	.066
30	.122	-.080	-.101	.291	-.098	.209	.051	-.147	-.046	-.202	.049	.266	-.145	-.078
31	.197	-.041	.065	.212	.118	.343	-.170	.354	.012	-.006	.252	-.033	.506	.001
32	.097	-.018	.102	-.217	-.099	.448	.061	.329	-.065	-.159	.330	.198	.329	.392
33	.052	-.051	.137	-.039	-.097	.008	.287	.378	-.029	.525	.265	.204	.309	-.207
34	-.010	.193	.036	-.425	-.053	.065	.338	.518	.076	-.054	.065	.038	.531	.089
35	.502	.157	.444	.377	-.080	.223	-.362	-.085	.051	.113	.235	-.142	.166	.041
36	.538	.071	.370	.092	-.449	-.076	-.064	-.074	-.044	.426	.321	.115	-.101	.022
37	.287	-.001	-.042	.062	.082	-.149	-.196	.440	.059	.045	-.007	-.247	.582	-.188
38	-.002	-.189	-.035	-.065	.054	.073	.122	.683	.087	.005	-.158	.067	.605	-.173
39	-.017	.353	.172	-.115	.144	.542	.282	.086	.057	.001	.130	.160	.379	.246
40	.049	.008	.051	.753	.034	-.021	.003	.066	.043	.001	.053	-.106	.038	-.806
41	.320	.106	-.069	.299	.204	.104	-.202	.204	-.005	.035	.252	.020	.491	-.128
42	.358	-.053	.245	.334	.110	-.276	-.063	-.026	-.016	-.079	.302	.046	.235	-.369
43	-.079	.441	.048	.078	.294	.090	.237	.011	.003	.070	.202	-.142	.351	-.220
44	.209	.318	.323	-.096	.186	.078	.049	.246	-.064	-.065	.170	-.733	.605	.029
45	.622	.246	.079	-.006	.142	-.079	-.057	.064	.083	.073	.165	-.32	.635	.063
46	-.033	-.013	-.012	.090	.374	.322	.314	.119	.191	-.100	.046	.387	.475	-.049
47	.109	.428	.054	-.048	-.098	-.088	-.026	.158	.501	.011	.172	-.370	.270	-.100
48	-.134	.109	-.072	-.053	.161	-.063	.086	-.073	.642	.016	-.110	-.068	.046	-.051
49	.008	.190	.137	-.029	.098	-.121	.231	.433	.422	-.017	.055	-.131	.525	-.357
50	.493	.115	.063	.020	-.217	.062	-.123	-.094	-.281	.069	-.005	.090	.077	.206
51	-.033	-.004	-.067	-.036	.347	-.022	.057	-.015	.237	.039	.411	.069	.277	-.007
52	-.082	-.018	.092	.021	.180	.096	.106	-.010	.087	.061	.498	.085	.109	.006
53	-.064	-.043	.011	.776	-.065	-.034	.024	-.035	-.054	.031	.024	-.084	.221	.827
54	.325	.217	.349	.296	.061	.071	.112	.344	-.123	-.182	.069	-.033	.603	-.401
55	.062	-.023	.075	-.023	.489	.479	-.073	-.001	-.087	-.045	-.028	.212	.500	.409
56	-.139	-.010	.007	.046	.714	.060	.128	-.061	-.048	.023	-.228	.152	.495	-.052
57	.419	.149	-.082	.044	.050	.283	.188	.100	.224	.459	-.007	-.004	.436	.260
58	.132	-.082	.452	-.239	-.023	-.299	.075	.301	.103	-.249	-.127	.014	.309	-.058
59	.230	-.041	-.006	.424	.123	-.133	-.015	-.099	.210	-.184	.269	.083	.199	.410
60	-.024	.005	-.265	-.031	-.170	.002	-.081	.341	.014	.394	-.282	-.228	.110	-.085

* Decimals properly preceding each entry have been omitted.

were no more likely than other individuals to show these occupational preferences, Factor VII of Lurie's analysis,² which heavily involves both Variable 9 and Variable 11, would bear some resemblance to Factor I and could plausibly be regarded as an aesthetic factor. If the primary trait involved in these two factors were explained in terms of the traditions of those individuals who have leisure to enjoy the

various forms of art, this possibility would appear much more reasonable. Undoubtedly, aesthetic appreciation is associated with the economic standards and leisure of the professional and upper middle classes, whether this is due to the traditions and training of these social classes, to their greater opportunity, or whether it must be explained in some other way.

In summary, then, it may be said that Factor I is undoubtedly aesthetic and that it apparently follows rather closely the content intended by the authors of

² Lurie interprets Factor VII of his analysis as indicating a sort of lip service to aesthetic values. He does not regard Factor VII as well defined or as well established.

the test. It will become evident in discussion of Factor II, however, that a considerable proportion of variance of aesthetic variables is not accounted for by Factor I. General Aesthetic Interest will serve as a convenient designation for Factor I.

Factor II: Interest in the Fine Arts

Variable 2. Loading, .45. He believes that it is justifiable for the great artists such as Beethoven to be selfish and negligent of the feelings of others.

Variable 43. Loading, .44. Assuming that he had the necessary ability and that the salary for each of the following occupations was the same, he would prefer to be a mathematician, rather than a sales manager, clergyman, or politician.

Variable 47. Loading, .43. At an evening discussion with intimate friends of his own sex, he is most interested when he talks about philosophy and psychology, literature, socialism and social amelioration rather than the meaning of life.

Variable 22. Loading, .43. He feels that our modern industrial and scientific developments are not signs of a greater degree of civilization and culture than those attained by any previous race, such as the Greeks.

Variable 17. Loading, .37. He would prefer to hear a series of popular lectures on the contemporary painter rather than the progress and needs of social-service work in the cities of his part of the country.

Variable 7. Loading, .36. In a paper such as the *New York Sunday Times*, he is more interested in the section on picture galleries than in the real-estate section and the account of the stock market.

Variable 39. Loading, .35. If he lived in a small town and had more than enough income for his needs, he would prefer to use it to endow the church to which he belonged, give it to a university for the development of scientific research, devote it to hospitals; rather than apply it productively to industrial development.

Variable 26. Loading, .34. Taking the Bible as a whole, he would prefer to regard it from the point of view of its beautiful mythology and literary style rather than as a spiritual revelation.

Variable 15. Loading, .32. If he had the opportunity, and if nothing of the kind existed in the community or college where he lived, he would prefer to found a classical orchestra rather than a debating society.

Variable 1. Loading, .32. He believes that the

main object of scientific research should be the discovery of pure truth rather than its practical applications.

Variable 44. Loading, .32. Assuming that he had the necessary ability and that the salary for each of the following occupations was the same, he would prefer to be a mathematician, clergyman, or politician; rather than a sales manager.

Variable 16. Loading, .30. At an exposition he prefers to see scientific apparatus or chemical products rather than automobiles.

Factor II appears to be a dimension measuring aspects of aesthetic appreciation and a tendency, often attributed to artists, toward lack of conventional behavior or beliefs. Variables 1, 7, 17, 22, 39, and 43, together possibly with Variables 16 and 44, suggest that the lack of conventionality tends to channelize in negative reactions toward aspects of business and industry. Although some of the negative alternatives are social or religious, none are political.

It should be noted that a liking for reading of *Arts and Decorations* (Variable 19), for collecting paintings and sculpture (Variable 45), belief in the importance of ideals of beauty (Variable 54), liking for ballet (Variable 42), and liking for scenery (Variable 50) are not indicative of high scores on Factor II, although these must doubtless be classified as indicating aesthetic inclinations. Variables 4, 19, and 35 are also uncorrelated with Factor II. Since these are the only items related to literature, the aesthetic tendencies involved in Factor II appear possibly to be limited to the fine arts. The loading of Variable 47 suggests a desire on the part of individuals high on Factor II to appear sophisticated or, at least, to avoid appearing naive, a tendency in keeping with the general tenor of the variables correlating with the factor.

There appears no relation between Factor II and any of the factors isolated by Lurie, nor any consistent relationship

to any of the measures obtained by scoring the original test.

The distinction between "we" and "they" groups often employed by sociologists may be important in understanding the determiners of the individual differences measured by Factor II. Persons high on Factor II possibly think of themselves as apart from others expressing conventional attitudes, and their beliefs serve as a means of identification with their group. A large proportion of the responses of an individual high on Factor II might tend to "shock" a conventional person.

Very possibly, the difference between Factors I and II centers in this aspect of Factor II. If, as was suggested in discussing the relation between Factor I and Lurie's Factor II, persons high in socioeconomic status have greater opportunity to develop aesthetic inclination, the emphasis on the "we" and "they" mechanism would appear even more justifiable. An additional and more apparent difference is that Factor II is less general than Factor I and accounts for less variance.

Factor II will tentatively be regarded as measuring "interest in the fine arts."

Factor III: Belief in "Culture"

Variable 21.³ Loading, .55. He feels that the aim of the churches at the present time should be to convey spiritual worship and a sense of communion with the highest; rather than to bring out charitable tendencies and to urge people to think more of the good of others.

Variable 6.³ Loading, .51. He considers high ideals and reverence more desirable character traits than unselfishness and sympathy.

Variable 58. Loading, .45. He would prefer, if he were to marry, a wife who could achieve social prestige commanding admiration from others, one who is fundamentally spiritual in her attitude toward life, or one who is gifted

along artistic lines; rather than one who likes to stay at home and keep house.

Variable 35. Loading, .44. If he could influence the educational policies of the public schools of some city, he would undertake to promote the study and the performance of the drama; rather than to develop cooperativeness and the spirit of service, to provide additional laboratory facilities, or to promote school savings banks for education in thrift.

Variable 36. Loading, .37. If he could influence the educational policies of the public schools, he would undertake to promote the study and the performance of the drama, to provide additional laboratory facilities, to promote school savings banks for education in thrift; rather than develop cooperativeness and the spirit of service.

Variable 4. Loading, .37. If he were a university professor and had the necessary ability, he would prefer to teach poetry rather than chemistry and physics.

Variable 54. Loading, .35. He believes that one should guide one's conduct according to, or develop one's chief loyalties toward, one's ideals of beauty; rather than one's religious faith, one's business organizations and associates, or society as a whole.

Variable 20.³ Loading, .34. He would encourage his children to make several teams rather than to have vocational training.

Variable 44. Loading, .32. Assuming that he had the necessary ability and that the salary for each of the following occupations was the same, he would prefer to be a mathematician, clergyman, or politician; rather than a sales manager.

Factor III correlates positively with two religious and four aesthetic variables, but does not generally follow the pattern of any of the Allport-Vernon scoring keys.

The common element here involved seems best described as a scale differentiating the person interested in the "higher things of life" from those concerned with a more rational or realistic viewpoint; and persons striving, possibly, for "culture," from those antagonistic toward or suspicious of the intangible nature of such evaluative tendencies.

It should be noted that none of the items which tend to be selected by a person with a positive score on Factor III have obvious, practical, or immediately observable value; none are related to apparent biological or social needs.

³ Both statement and sign of factor loading have been reversed. This reversal allows listing of the loading in positive form.

A person who stresses immediate, tangible benefits can see them resulting from "thinking more of the good of others," "providing laboratories," "promoting thrift or unselfishness," "chemistry," "staying home and keeping house," "vocational training," or "being a sales manager"; but such things as "spiritual worship," "drama," "high ideals and reverence," "poetry," and "ideals of beauty" have value which is difficult to justify on obvious rational grounds. Possibly acceptance of the personal values evident in the variables listed under Factor III depends upon intuitive or mystical processes. Emotional overtones subjectively important to the individual may play an important role. Attention is invited to the considerable proportion of items dealing with ethical problems.

In all, the name "Belief in Culture" characterizes Factor III with reasonable adequacy.

Factor IV: Antireligious Evaluative Tendency

Variable 53. Loading, .78. He believes that one should guide one's conduct according to, or develop one's chief loyalties toward, one's ideals of beauty, one's business organizations and associates, society as a whole; rather than toward one's religious faith.

Variable 40. Loading, .75. If he lived in a small town and had more than enough income for his needs, he would prefer to apply it productively to industrial development, give it to a university for the development of scientific research, or devote it to hospitals; rather than help to endow the church to which he belongs.

Variable 24. Loading, .61. He feels that the world would *not* be a much better place if we took to heart the teaching, "Lay not up for yourselves treasures upon earth . . . but lay up for yourselves treasures in heaven, where neither moth nor rust doth corrupt, and where thieves do not break through nor steal."

Variable 26. Loading, .58. Taking the Bible as a whole he would prefer to regard it from the point of view of its beautiful mythology and literary style rather than as a spiritual revelation.

Variable 11. Loading, .44. When he visits a cathedral, he is more impressed by the architectural features and stained glass than by a pervading sense of reverence and worship.

Variable 34.⁴ Loading, .43. He believes that a man who works in business all week can best spend Sunday by trying to win at golf or racing; rather than in trying to educate himself by reading serious books, going to an orchestral concert, or hearing a really good sermon.

Variable 59. Loading, .42. He would like to think of Leonardo da Vinci's "The Last Supper" as one of the most priceless and irreplaceable pictures ever painted, in relation to Leonardo's versatility and its place in history, or as a masterpiece of design; rather than as expressing the highest spiritual tendencies and emotions.

Variable 28. Loading, .42. If he were to choose a topic on which to write an essay, he would choose the defects of our present educational systems rather than the role of church-going in religion.

Variable 6. Loading, .40. He considers unselfishness and sympathy more desirable character traits than high ideals and reverence.

Variable 35. Loading, .38. If he could influence the educational policies of the public schools of some city, he would undertake to promote the study and the performance of drama; rather than to develop cooperativeness and the spirit of service, to provide additional laboratory facilities, or to promote school savings banks for education in thrift.

Variable 13. Loading, .38. He believes that the evidence that has been impartially accumulated goes to show that the universe has evolved to its present state in accordance with mechanistic principles, so that there is no need to assume a first cause, cosmic purpose, or God behind it.

Variable 14.⁴ Loading, .37. In his opinion, general progress has been advanced more by the discovery of the steam engine with the consequent industrialization and economic rivalry in American and European countries; rather than by the freeing of slaves with enhancement of the value placed on individual life.

Variable 21. Loading, .35. He feels that the aim of the churches at the present time should be to bring out charitable tendencies, and to urge people to think more of the good of others, rather than to convey spiritual worship and a sense of communion with the highest.

Variable 42. Loading, .33. When he goes to the theatre, he enjoys most, as a rule, ballet or similar imaginative performances; rather than plays that treat the lives of great men, plays with a theme of human suffering and love, or problem plays that argue consistently for some point of view.

With the exception of Variables 3, 9, 18, 38, and 47, all of the religious variables have significant negative loading on Factor IV, and of these five exceptions, Variables 9 and 18 both have loadings greater than .20. While Variables 3, 38,

⁴ Both statement and sign of factor loading have been reversed.

and 47 are regarded as religious by the authors of the test, this interpretation appears questionable. This difference in interpretation, which concerns a possible distinction between particular religious organizations and general religious attitude, will be considered in later discussion of the meaning of this factor.

As in the case of Factor I, the more general interpretation is quite clear. Factor IV is with little doubt antireligious in nature. While its more specific interpretation is not so clear, several possibilities will be discussed in the following paragraphs.

It appears plausible that Factor IV is concerned with the operation of the church as an institution; that it concerns the creed and social controls of the Christian church; and that it does not measure any fundamental evaluative trait common to religious individuals of other than the Christian creed. (It will be convenient to speak of religious evaluation even though low scores are indicative of high religious evaluative tendency.) In the absence of any direct indication to the contrary, "Christian" will refer to both the Protestant and Catholic churches. Those items loaded to the extent of .45 or greater most certainly give the impression of measuring mere conventional indoctrination. In numerous instances the social forces which operate to ostracize the doubter and disbeliever appear to be determining the responses. The aforementioned insignificant loadings of Variables 3, 38, and 47, which were apparently included by the authors of the test in an attempt to broaden the measure of religious evaluation beyond that of the conventional church member, are important to this interpretation.

Further support of this theory is found in the loading of certain variables on the religious factor appearing in Lurie's analysis, in that variables with component items designed to measure a religious evaluative tendency more general than that involved in the Christian religion did not have high loadings on his religious factor. It is possible that if these component items measuring religious evaluative tendency non-Christian in nature could have been separated from the remaining items or those measuring Christian religious evaluation, that such non-Christian items would have been found to correlate negatively with his religious factor. Variable 22, wherein the items all concern conventions of the Christian religion, is the only variable in Lurie's analysis heavily involving

his religious factor.

Certain further elaborations upon the simple hypothesis of religious tendency are suggested. Since agreement with such phases as "the aim of the churches at the present time should be to bring out charitable tendencies, and to urge people to think more of the good of others" (Variable No. 21), schools should develop "co-operativeness and the spirit of service" (Variable No. 36), or "he considers unselfishness and sympathy more desirable character traits than high ideals and reverence" (Variable No. 6) is always indicative of nonreligious tendency insofar as this may be determined by Factor IV, it is not unreasonable to conclude that religious tendency as defined by Factor IV is not primarily ethical in nature. Of course, two of these above-listed statements, namely those from Variable 6 and 21, involve a choice between ethical values which should be related to religious evaluative tendency. However, in the remaining instance, that from Variable 36, even though no choice was involved between ethical and other aspects of religious evaluation, the same negative correlation was observed.

A consideration of Variables 6, 11, 21, 26, and 59 leads to the conclusion that reverence is an important aspect of religious evaluation as defined by Factor IV. This is in agreement with the previously suggested interpretation of Factor IV as a measure of the tendency to accept the teachings of the church without question.

In summary, then, Factor IV is undoubtedly antireligious in nature and is probably concerned largely with evaluation of the church as an institution. Factor IV will be referred to as "Anti-religious Evaluative Tendency."

Factor V: Antiaggression

Variable 56. Loading, .71. Florence Nightingale, Henry Ford, or Charles Darwin interests and attracts him more than Napoleon.

Variable 25. Loading, .51. He is more interested in reading accounts of the lives and works of such men as Aristotle, Plato, and Socrates than of Alexander, Julius Caesar, and Charlemagne.

Variable 55. Loading, .49. Florence Nightingale interests and attracts him more than Napoleon, Henry Ford, or Charles Darwin.

Variable 3. Loading, .46. He does not believe that because of the aggressive and self-assertive nature of man the abolition of war is an illusory ideal.

Variable 36.^a Loading, .45. If he could influ-

^a Both statement and sign of factor loading have been reversed.

ence the educational policies of the public schools, he would undertake to develop cooperativeness and the spirit of service; rather than to promote the study and the performance of the drama, to provide additional laboratory facilities, or to promote school savings banks for education in thrift.

Variable 46. Loading, .37. If he had unlimited leisure and money, he would prefer to establish a mental hygiene clinic for taking care of the maladjusted and mentally deficient; rather than make a collection of fine sculptures or paintings, aim at a senatorship or a seat in the Cabinet, or enter into banking and high finance.

Variable 51. Loading, .35. Great exploits and adventures of discovery such as Lindbergh's and Byrd's seem significant because they add to our knowledge of mechanics, geography, meteorology, etc., weld human interests and international feelings throughout the world, or contribute to the ultimate revelation of the meaning of the universe; rather than because they represent conquests by man over the difficult forces of nature.

Variable 43. Loading, .29. Assuming that he had the necessary ability and that the salary for each of the following occupations was the same, he would prefer to be a mathematician; rather than a sales manager, clergyman, or politician.

While the relation of the Allport-Vernon theoretic score to Factor V is not so clearly evident as in the case of Factors I and IV, there are certain resemblances which will bear comment. Of the 8 variables with significant loading on Factor V, 4 were political, and of the remaining 3, 2 involved political evaluations as alternate choices. All of such political evaluations correlated negatively with Factor V. On the positive pole, 3 of these above-listed variables were social and 2 alternative choices were social. One of the variables is theoretical and 4 additional variables involved alternative choices similarly designated. It appears that Factor V may be best described in terms of the evaluative scores as social, and possibly theoretic on the positive pole and as political on the negative pole.

Examination of the listing of variables with high loading on Factor V

suggests that, on the negative pole, the interests and evaluations expressed seem related to conflict, possibly even more to armed conflict, while on the positive side, the intellectual interests and social sympathies which seem to be expressed are somewhat withdrawing in nature. It should be noted that none of the theoretic items involved in Factor V are measures of interest in the natural sciences. None of the items high on Factor V scored as social appear to concern social issues which are in active dispute at the present time.

The term "Antiaggression" will serve to identify Factor V.

Factor VI: Humanitarian Tendency

Variable 39. Loading, .54. If he lived in a small town and had more than enough income for his needs, he would prefer to use it to endow the church to which he belonged, give it to a university for the development of scientific research, devote it to hospitals; rather than apply it productively to industrial development.

Variable 9. Loading, .50. He should prefer to read the headlines "Protestant Leaders To Consult On Reconciliation" rather than "Great Improvements In Market Conditions."

Variable 55. Loading, .48. Florence Nightingale interests and attracts him more than Napoleon, Henry Ford, or Charles Darwin.

Variable 12. Loading, .47. He does not believe that contemporary charitable policies should be curtailed because they tend to undermine individual initiative.

Variable 32. Loading, .45. He believes that good government should aim at more aid for the poor, sick, and old, the introduction of more ethical principles into its policies and diplomacy, the establishment of a position of prestige and respect among nations; rather than the development of manufacturing and trade.

Variable 31. Loading, .34. He believes that good government should aim at more aid for the poor, sick and old; rather than the development of manufacturing and trade, introduction of more ethical principles into its policies and diplomacy, or the establishing of a position of prestige and respect among nations.

Variable 17.⁶ Loading, .32. He would prefer to hear a series of popular lectures on the prog-

⁶ Both statement and sign of factor loading have been reversed.

ress and needs of social-service work in the cities of his part of the country rather than on the contemporary painter.

Variable 46. Loading, .32. If he had unlimited leisure and money, he would prefer to establish a mental hygiene clinic for taking care of the maladjusted and mentally deficient; rather than make a collection of fine sculptures or paintings, aim at a senatorship or a seat in the Cabinet, or enter into banking and high finance.

On the positive pole, Factor VI heavily involves social variables and correlates negatively with a number of items measuring economic evaluative tendency. An appreciable number of items measuring theoretic evaluative tendency correlate with Factor VI. While there might seem to be some resemblance to Factor V because of the large number of social items involved in each instance, they differ from each other in that social items of Factor V are largely concerned with evaluations of persons or of characteristics of persons while those high on Factor VI tend more to be concerned with social issues. Possibly Factor VI can best be described as concerned with interest in social reform that will aid in improving the welfare of the underprivileged. The term Humanitarian Tendency appears most appropriate of those occurring to the author.

In the above listing only Variable 9 appears at all inconsistent with this statement as to the nature of Factor VI. Even here the inconsistency is not so much in its loading on Factor VI but in the size of the loading. With the possible exception of Variables 6 and 21, none of the variables having near zero loading on Factor VI appear to measure the primary trait described in the above hypothesis. The abstract statement of Variables 6 and 21 and the fact that both involve a religious evaluation as an alternative to an apparent measure of a humanitarian tendency, may help to explain their lack of loading on Factor VI.

Factor VI might be regarded, on the surface, as resembling Lurie's Factor I, which he interpreted as being social in nature. However, in spite of the many items high on Factor VI which were intended as a measure of the "social man," a close comparison of the individual items of

Factor VI reveals little definite resemblance.

Variables 14 and 27 are the only apparent measures of humanitarianism not loaded on Factor VI. Of these two, Variable 27 has a loading of .237.

The term "Humanitarian Tendency" will be used to identify Factor VI.

Factor VII: Interest in Science

Variable 19.¹ Loading, .56. If he had some time to spend in a waiting room and there were only two magazines to choose from, he would read *The Scientific American* rather than *Arts and Decorations*.

Variable 10. Loading, .55. He would prefer to read the story "Physicists Make Important Discoveries Concerning The Structure Of Atoms" rather than "Threat To Constitutional Government In Germany By A Dictator."

Variable 4.¹ Loading, .52. If he were a university professor and had the necessary ability, he would prefer to teach chemistry and physics rather than poetry.

Variable 16. Loading, .40. At an exposition he prefers to see scientific apparatus or chemical products rather than automobiles.

Variable 35.¹ Loading, .36. If he could influence the educational policies of the public schools of some city, he would undertake to develop cooperativeness and the spirit of service, to provide additional laboratory facilities, or to promote school savings banks for education in thrift; rather than undertake to promote the study and performance of drama.

Variable 34. Loading, .34. He believes that a man who works in business all week can best spend Sunday in trying to educate himself by reading serious books, going to an orchestral concert, or hearing a really good sermon; rather than by trying to win at golf or racing.

Variable 46. Loading, .31. If he had unlimited leisure and money, he would prefer to establish a mental hygiene clinic for taking care of the maladjusted and mentally deficient; rather than make a collection of fine sculptures or paintings, aim at a senatorship or a seat in the Cabinet, or enter into banking and high finance.

All except three of the variables significantly loaded on Factor VII clearly imply an interest in the sciences. Furthermore, with the possible exception of Variable 49, which has a loading of .231, there are no additional items in the

¹ Both statement and sign of factor loading have been reversed.

present analysis not loaded on Factor VII which can readily be interpreted as measuring such interest. Hence, there appears little doubt that Factor VII is a primary trait measuring interest in science.

The loadings of the three items not obviously concerned with interest in science, namely, numbers 34, 35, and 46, are not necessarily inconsistent with this hypothesis as to the nature of Factor VII. It should be noted that one of the alternatives of Variable 35 is concerned with the promotion of laboratory work in the schools. This may partly explain its loading on Factor VII. Possibly, with reference to Variable 34, it is characteristic of scientists that they dislike the idea of promoting the study of drama in the public schools.

The isolation of Factor VII, which involves only a few of the theoretical items of the present analysis, clearly indicates the existence of several rather than a single primary trait of theoretical evaluative tendencies. Lurie's findings of a single primary trait of theoretical interest is probably due to the complexity of the variables in his analysis. (It will be remembered that each of his variables was the sum of several items.) It is interesting in this connection that a minus rotation, in Lurie's analysis, of Factor V on Factor I would leave only Variables 1 and 3 of his analysis high on Factor V. His Factor V would, then, bear some resemblance to Factor VII of the present analysis.

Factor VII will be identified by the term, "Interest in Science."

Factor VIII: Tendency toward Liberalism

Variable 38. Loading, .68. He would prefer a friend of his own sex who is seriously interested in thinking out his attitude toward life as a whole; rather than one who is efficient, industrious, and of a practical turn of mind, one who possesses qualities of leadership and organizing ability, or one who shows refinement and emotional sensitivity.

Variable 34. Loading, .52. He believes that a

man who works in business all week can best spend Sunday in trying to educate himself by reading serious books, going to an orchestral concert, or hearing a really good sermon; rather than by trying to win at golf or racing.

Variable 37. Loading, .45. He would prefer a friend of his own sex who is seriously interested in thinking out his attitude toward life as a whole, one who possesses qualities of leadership and organizing ability, one who shows refinement and emotional sensitivity; rather than one who is efficient, industrious, and of a practical turn of mind.

Variable 49. Loading, .43. During his next summer vacation he would prefer to write and publish an original biological essay or article; rather than stay in some secluded part of the country where he could appreciate fine scenery, go in for a local tennis or other athletic tournament, or get experience in some new line of business.

Variable 14. Loading, .41. In his opinion, general progress has been advanced more by the freeing of slaves with enhancement of the value placed on individual life rather than by the discovery of the steam engine with consequent industrialization and economic rivalry in American and European countries.

Variable 12. Loading, .39. He does not believe that contemporary charitable policies should be curtailed because they tend to undermine individual initiative.

Variable 33. Loading, .38. He believes that a man who works in business for his living all the week can best spend Sunday in trying to educate himself by reading serious books; rather than by trying to win at golf or racing, going to an orchestral concert, or by hearing a really good sermon.

Variable 27. Loading, .37. He does not believe that since the class or social status to which a man belongs depends mainly upon his push and ability, it is just that a small proportion of the population should be very rich.

Variable 31. Loading, .35. He believes that good government should aim at more aid for the poor, sick, and old; rather than the development of manufacturing and trade, introduction of more ethical principles into its policies and diplomacy, or the establishing of a position of prestige and respect among nations.

Variable 54. Loading, .34. He believes that one should guide one's conduct according to, or develop one's chief loyalties towards, one's ideals of beauty; rather than one's religious faith, one's business organizations and associates, or society as a whole.

Variable 60. Loading, .34. He would like to think of Leonardo da Vinci's picture "The Last Supper" as expressing the highest spiritual tendencies and emotions, in relation to Leo-

nardo's versatility and its place in history, as a masterpiece of design; rather than as one of the most priceless and irreplaceable pictures ever painted.

Variable 32. Loading, .33. He believes that good government should aim at more aid for the poor, sick, and old, the introduction of more ethical principles into its policies and diplomacy, the establishment of a position of prestige and respect among nations; rather than the development of manufacturing and trade.

Variable 58. Loading, .30. He would prefer, if he were to marry, a wife who could achieve social prestige, commanding admiration from others, one who is fundamentally spiritual in her attitude toward life, one who is gifted along artistic lines; rather than one who likes to stay at home and keep house.

Factor VIII heavily involves items intended as measures of the economic man on its negative pole and correlates positively with items intended as measures of the social and of the theoretic man. Thus, there are 7 economic variables high on Factor VIII and 4 with economic alternatives. On the other hand, the principal items in 4 of the above-listed variables and alternatives in 2 additional variables are social measures. Two variables and alternatives of 3 additional variables loaded upon Factor VIII are theoretic measures. Variables 5, 7, 9, 20, 22, 24, 29, 39, and 44 comprise a listing of those economic variables not significantly loaded on Factor VIII. If we neglect Variables 5 and 20 on the ground that they are not loaded significantly on any of the primary traits of the present analysis, and Variables 22 and 24 on the ground that their loadings approach significance, and compare the remaining above-listed variables, namely, numbers 7, 9, 29, and 39 with numbers 12, 14, 37, 32, 38, 27, and 28 of the list of variables high on Factor VIII, it seems apparent that the economic items loaded on Factor VIII may be differentiated from those not so loaded in that they either state or imply the desirability or undesirability of characteristics

of our economic system. Further evidence of a similar nature is found in examining the afore-mentioned social and economic variables significantly loaded on Factor VII. These may likewise be differentiated from social and theoretic variables not loaded on Factor VIII in that the former are concerned with social issues whereas the latter are not. By and large these social and theoretic items might be described as expressing beliefs favoring the underprivileged groups or possibly as being "liberal" or "New Dealish." This may not be so apparent in the case of Variables 34, 37, 38, and 49. However, these can be explained by the plausible assumption that beliefs concerning economic systems are in part, at least, a function of social groupings and the ways of life of these social groups.

If we assume similar tendencies on the part of the "liberals" at the opposite pole, we may readily understand the loadings of Variables 38 and 49. Since Variables 34, 37, 38, and 49 all have higher-than-average loadings, it would seem that such preferences are themselves better-than-average measures of liberal tendencies and are more fundamental variables in the cluster of traits defined by this factor.

The term "Tendency toward Liberalism" will be employed to designate Factor VIII. It is suggested that the factor measures differences between social groups such as business men on the one hand and "liberals" or "New Dealers" on the other.

While Lurie's Factor II (which he labeled a measure of philistine tendencies) bears rather general resemblance to Factor VIII, more specific examination of the variables defining the two factors suggests that the resemblance is superficial. Thus, Lurie's Factor II is correlated with variables measuring interest in politics and with others that he had regarded as aesthetic. These latter are similar to those highly loaded on

Factor II of the present analysis. A further difference is found in the lack of social or theoretic variables in Lurie's Factor II, although the resemblance of Lurie's "social" and "theoretic" variables to those of the present analysis is so uncertain as to make comment on this discrepancy rather difficult.

Since Factor VI appeared also to involve a liberal or progressive point of view, certain differences between these factors will be indicated. The high loadings of Variables 17, 46, and 55 on Factor VI and their near zero loadings on Factor VIII suggest that the personal and emotional component of Factor VI is absent in Factor VIII. By contrast, Factor VIII is impersonal and intellectual. Similarly, the loadings of Variables 9, 39, and possibly 7 suggest that the person high on Factor VI is likely to show no interest in business or industry while the individual high on Factor VIII is apparently as likely as the person low on Factor VIII to show interest in business trends. The distinguishing characteristic of the person high on Factor VIII is his disagreement with the evaluations of business men, but not in his lack of interest in economic problems.

Factor IX: Theoretic Interest

Variable 48. Loading, .64. At an evening discussion with intimate friends of his own sex, he is most interested when they talk about philosophy and psychology; rather than the meaning of life, literature, or socialism and social amelioration.

Variable 47. Loading, .56. At an evening discussion with intimate friends of his own sex, he is most interested when he talks about philosophy and psychology, literature, socialism and social amelioration; rather than the meaning of life.

Variable 49. Loading, .42. During his next summer vacation, he would prefer to write and publish an original biological essay or article; rather than stay in some secluded part of the country where he could appreciate fine scenery, go in for a local tennis or other athletic tournament, or get experience in some new line of business.

Variable 21. Loading, .40. He feels that the

aim of the churches at the present time should bring out charitable tendencies, and urge people to think more of the good of others; rather than to convey spiritual worship and a sense of communion with the highest.

Variable 16. Loading, .37. At an exposition he prefers to see scientific apparatus or chemical products rather than automobiles.

Variable 11. Loading, .36. When he visits a cathedral, he is more impressed by the architectural features and stained glass than by the pervading sense of reverence and worship.

Variable 23. Loading, .33. If he were waiting in a strange living room, he would be more apt to judge the owner's knowledge and intellectuality as shown by the books in his bookcases than his friendliness and hospitality as shown by the photographs on the walls and the general comforts of the room.

Variable 8. Loading, .33. He does not think that a person who analyzes his emotions is apt to be less sincere in his feeling than one who is not so reflective.

Of the above listing, Variables 48, 49, 16, 23, and 8 are all scored as theoretic. If we exclude from consideration the several items involved in Factor VII, the interest in science factor: viz., Variables 15, 52, and possibly 25, in that these have marginal loadings on Factor IX; and Variables 15, 52, and possibly 25, in that they have marginal loadings on Factor IX, then Variables 1, 33, and 43 are the only remaining measures of theoretic evaluative tendency not loaded on Factor IX. Although Variables 11 and 21, both of which are significantly loaded on Factor IX, contain no items intended as measures of theoretic tendency, it is the author's opinion that these variables are nonetheless indicative of theoretic interests. The alternative items in Variable 47 undoubtedly explain the findings that this variable correlates with an apparent measure of theoretic tendency. Consequently, Factor IX will be regarded as a measure of theoretic interests. The theoretic element common to the variables having high loadings on Factor IX is identified with somewhat more confidence than in the case of a number of

the remaining factors, since the variables concern a considerable variety of activities and beliefs.

It has already been mentioned that Lurie isolated a single "theoretic" primary evaluative tendency. The relation of this trait to Factors VII and IX of the present analysis is not clear. Probably the present analysis, with less complex variables, has succeeded in breaking Lurie's single primary trait into two separate factors. Neither of these two factors bears striking resemblance to Lurie's theoretical factor. In part, this is doubtless due to the earlier mentioned fact that Lurie's theoretic (and social) variables are difficult to relate to those of the Allport-Vernon test.

Factor X: "Rugged Individualism"

Variable 33. Loading, .53. He believes that a man who works in business for his living all the week can best spend Sunday in trying to educate himself by reading serious books; rather than by trying to win at golf, or racing, going to an orchestral concert, or hearing a really good sermon.

Variable 3.^a Loading, .47. He believes that because of the aggressive and self-assertive nature of man the abolition of war is an illusory ideal.

Variable 57. Loading, .46. He would prefer, if he were to marry, a wife who would like to stay at home and keep house, one who is fundamentally spiritual in her attitude toward life, one who is gifted along artistic lines; rather than one who can achieve social prestige commanding admiration from others.

Variable 36. Loading, .43. If he could influence the educational policies of the public schools, he would undertake to promote the study and the performance of the drama, to provide additional laboratory facilities, to promote school savings banks for education in thrift; rather than to develop cooperativeness and the spirit of service.

Variable 14.^a Loading, .41. In his opinion, general progress has been advanced more by the discovery of the steam engine with the consequent industrialization and economic rivalry in American and European countries, than by the freeing of slaves with enhancement of the value placed on individual life.

Variable 60. Loading, .39. He would like to think of Leonardo da Vinci's picture "The Last Supper" as expressing the highest spiritual tendencies and emotions, in relation to Leonardo's versatility and its place in history, as a masterpiece of design; rather than as one of the most priceless and irreplaceable pictures ever painted.

Variable 7.^a Loading, .37. In a paper such as the *New York Sunday Times*, he is more interested in the real-estate section and the account of the stock market than in the section on picture galleries.

Variable 12.^a Loading, .30. He believes that contemporary charitable policies should be curtailed because they tend to undermine individual initiative.

When the rotations from the centroid to the primary-trait loadings were first thought to be complete, Factor X appeared of doubtful significance. Apart from the afore-mentioned difficulties in the rotation of Factor X, its high saturation with the later centroid factors should suggest that its significance as a primary trait be accepted rather tentatively. Consequently, further rotations were made in an attempt to produce a more meaningful configuration. Although those items with loadings of borderline significance could be altered, those with loading above .4 maintained their identity throughout these additional rotations. More careful examination suggested that the common elements to the variables of the above listing could be meaningfully interpreted.

Factor X appears to be unrelated to any of the six original scores of the test or to any of the factors isolated by Lurie.

Tentatively, it is suggested that Factor X is related to the American tradition of rugged individualism; to the belief that people get ahead through hard work and are motivated by competition and desire for economic advancement. It is emphasized that this tradition as here interpreted has been closely associated with and advocated by business and industry. This hypothesis directly explains the loadings of Variables 33, 7, 12, and 14. The belief in the inevitability of war expressed in Variable 3 is

^a Both statement and sign of factor loading have been reversed.

probably a generalization of the idea that man is competitive by nature. Variables 5 and 7 may reflect the traditional middle-class male dislike of society, a dislike which would seem related to rugged individualism, while the loading of Variable 60 may express a revolt of such an individual against what he considers an "over-evaluation" of da Vinci's painting. It should be noted that the three alternative choices of Variable 60 suggest somewhat less enthusiastic evaluation.

Factor X will be considered a measure of adherence to the evaluative standards associated with the term "Rugged Individualism."

Factor XI: Residual in Nature

Variable 52. Loading, .50. Great exploits and adventures of discovery such as Lindbergh's and Byrd's seem significant to him because they add to our knowledge of mechanics, geography, meteorology, etc.; rather than because they represent conquests by man over the difficult forces of nature, because they weld human interests and international feelings throughout the world, or because they contribute to the ultimate revelation of the meaning of the universe.

Variable 13.⁹ Loading, .42. He does not believe that the evidence that has been impartially accumulated goes to show that the universe has evolved to its present state in accordance with mechanistic principles, so that there is no need to assume a first cause, cosmic purpose, or God behind it.

Variable 51. Loading, .41. Great exploits and adventures of discovery such as Lindbergh's and Byrd's seem significant because they add to our knowledge of mechanics, geography, meteorology, etc., because they weld human interests and international feelings throughout the world or because they contribute to the ultimate revelation of the meaning of the universe; rather than because they represent conquests by man over the difficult forces of nature.

Variable 32. Loading, .33. He believes that good government should aim at more aid for the poor, sick, and old, the introduction of more ethical principles into its policies and diplomacy, the establishment of a position of prestige and

and respect among nations; rather than the development of manufacturing and trade.

Variable 36. Loading, .32. If he could influence the educational policies of the public schools, he would undertake to promote the study and the performance of the drama, to provide additional laboratory facilities, to promote school savings banks for education in thrift; rather than to develop cooperativeness and the spirit of service.

Variable 21. Loading, .32. He feels that the aim of the churches at the present time should be to bring out charitable tendencies, and to urge people to think more of the good of others; rather than to convey spiritual worship and a sense of communion with the highest.

Variable 42. Loading, .30. When he goes to the theater, he enjoys most, as a rule, ballet or similar imaginative performances; rather than plays that treat the lives of great men, plays with a theme of human suffering and love, or problem plays that argue consistently for some point of view.

Variable 27. Loading, .30. He does not believe that since the class or social status to which a man belongs depends mainly upon his push and ability, it is just that a small proportion of the population should be very rich.

No very consistent tendency is apparent in the meaning of variables with high loading on Factor XI. Since, in addition, few items have significant loadings, and the total variance accounted for is small, and the projections of this factor are heaviest on the later centroid factors (which are heavily saturated with sampling error), it seems reasonable to conclude that this factor is residual in nature. While it is often considered advisable to rotate the reference axis of the residual factor so that it is orthogonal to the remaining reference axes, it is evident from Table 4 that a minus rotation on Factor I, which will for practical purposes achieve orthogonality between Factor XI and the remaining primary traits, will produce no substantial changes in the variables high on Factor XI.

C. THE SECOND-ORDER FACTOR

It will be recalled from discussions

⁹ Both statement and sign of factor loading have been reversed.

under "Procedure" that three second-order factors were extracted from the intercorrelations of the primary traits and that the loadings of the test items on these second-order factors were then computed. The interpretation of these second-order factors will now be considered. In Table 6 these factors were labeled *A*, *B*, and *C* to distinguish them from the eleven first-order factors.

Second-Order Factor A: Not Identified

Variable 10. Loading, .51. He would prefer to read the story "Physicists Make Important Discoveries Concerning The Structure of Atoms" rather than "Threat To Constitutional Government In Germany By A Dictator."

Variable 13.³⁰ Loading, .45. He does *not* believe that the evidence that has been impartially accumulated goes to show that the universe has evolved to its present state in accordance with mechanistic principles, so that there is no need to assume a first cause, cosmic purpose, or God behind it.

Variable 18. Loading, .43. He would prefer to hear a series of lectures on the comparative development of the great religious faiths rather than the comparative merits of the forms of government in Britain and in the United States.

Variable 4.³⁰ Loading, .40. If he were a university professor and had the necessary ability, he would prefer to teach chemistry and physics rather than poetry.

Variable 46. Loading, .39. If he had unlimited leisure and money, he would prefer to establish a mental hygiene clinic for taking care of the maladjusted and mentally deficient; rather than make a collection of fine sculptures or paintings, aim at a senatorship or a seat in the Cabinet, or enter into banking and high finance.

Variable 47.³⁰ Loading, .37. At an evening discussion with intimate friends of his own sex, he is more interested when he talks about the meaning of life; than when he talks about philosophy and psychology, literature, or socialism and social amelioration.

Factor *A* is difficult to interpret. Since many of the first-order primary traits were not as clearly defined as might be desired, the intercorrelations of these traits are probably more unstable than

would be expected from sampling error alone. For this reason it would seem inadvisable to concern ourselves very greatly with the meaning of factors such as *A* which do not, in any case, account for a large proportion of the variance.

Second-Order Factor B: Idealism vs. Practicality

Variable 25. Loading, .67. He is more interested in reading accounts of the lives and works of such men as Aristotle, Plato, and Socrates; than of such men as Alexander, Julius Caesar, and Charlemagne.

Variable 45. Loading, .64. If he had unlimited leisure and money, he would prefer to make a collection of fine sculptures or paintings; rather than establish a mental hygiene clinic for taking care of the maladjusted and mentally deficient, aim at a senatorship or a seat in the Cabinet, or enter into banking and high finance.

Variable 44. Loading, .61. Assuming that he had the necessary ability and that the salary for each of the following occupations was the same, he would prefer to be a mathematician, clergyman or politician; rather than a sales manager.

Variable 38. Loading, .61. He would prefer a friend of his own sex who is seriously interested in thinking out his attitude toward life as a whole; rather than one who is efficient, industrious, and of a practical turn of mind, one who possesses qualities of leadership and organizing ability, or one who shows refinement and emotional sensitivity.

Variable 54. Loading, .60. He believes that one should guide one's conduct according to, or develop one's chief loyalties toward, one's ideals of beauty; rather than one's religious faith, one's business organizations and associates, or society as a whole.

Variable 37. Loading, .58. He would prefer a friend of his own sex who is seriously interested in thinking out his attitude toward life as a whole, one who possesses qualities of leadership and organizing ability, one who shows refinement and emotional sensitivity; rather than one who is efficient, industrious, and of a practical turn of mind.

Variable 34. Loading, .53. He believes that a man who works in business all week can best spend Sunday in trying to educate himself by reading serious books, going to an orchestral concert, or hearing a really good sermon; rather than by trying to win at golf or racing.

Variable 49. Loading, .53. During his next summer vacation he would prefer to write and publish an original biological essay or article;

³⁰ Both statement and sign of factor loading have been reversed.

rather than stay in some secluded part of the country where he could appreciate fine scenery, compete in a local tennis or other athletic tournament, or get experience in some new line of business.

Variable 31. Loading, .51. He believes that good government should aim at more aid for the poor, sick, and old; rather than the development of manufacturing and trade, introduction of more ethical principles into its policies and diplomacy, or the establishing of a position of prestige and respect among nations.

Variable 55. Loading, .50. Florence Nightingale interests and attracts him more than Napoleon, Henry Ford, or Charles Darwin.

Variable 18. Loading, .50. He would prefer to hear a series of lectures on the comparative development of the great religious faiths rather than the comparative merits of the forms of government in Britain and the United States.

Variable 56. Loading, .50. Florence Nightingale, Henry Ford, or Charles Darwin interests and attracts him more than Napoleon.

Variable 41. Loading, .49. When he goes to the theatre he enjoys most, as a rule, the ballet or similar imaginative performances, plays with a theme of human suffering and love, problem plays that argue consistently for some point of view; rather than plays that treat the lives of great men.

Variable 29. Loading, .48. If he were to choose a topic on which to write an essay, he would prefer the personality of some close friend of his rather than the necessities of life, luxuries, and savings.

Variable 46. Loading, .48. If he had unlimited leisure and money, he would prefer to establish a mental hygiene clinic for taking care of the maladjusted and mentally deficient; rather than make a collection of fine sculptures or paintings, aim at a senatorship or a seat in the Cabinet, or enter into banking and high finance.

Variable 27. Loading, .47. He does not believe that, since the class or social status to which a man belongs depends mainly upon his push and ability, it is just that a small proportion of the population should be very rich.

Variable 3. Loading, .46. He does not believe that because of the aggressive and self-assertive nature of man the abolition of war is an illusory ideal.

Variable 57. Loading, .44. He would prefer, if he were to marry, a wife who likes to stay at home and keep house, one who is fundamentally spiritual in her attitude toward life, one who is gifted along artistic lines; rather than one who can achieve social prestige commanding admiration from others.

Variable 14. Loading, .41. In his opinion, general progress has been advanced more by the freeing of slaves with enhancement of the value

placed on individual life rather than by the discovery of the steam engine with the consequent industrialization and economic rivalry in American and European countries.

Variable 39. Loading, .38. If he lived in a small town and had more than enough income for his needs, he would prefer to help to endow the church to which he belonged, give it to a university for the development of scientific research, devote it to hospitals; rather than apply it productively to industrial development.

Variable 43. Loading, .35. Assuming that he had the necessary ability and that the salary for each of the following occupations was the same, he would prefer to be a mathematician; rather than a sales manager, clergyman, or politician.

Variable 17. Loading, .35. He would prefer to hear a series of popular lectures on the contemporary painter rather than on the progress and needs of social service work in the cities of his part of the country.

Variable 32. Loading, .33. He believes that good government should aim at more aid for the poor, sick, and old, the introduction of more ethical principles into its policies and diplomacy, the establishment of a position of prestige and respect among nations; rather than the development of manufacturing and trade.

Variable 19. Loading, .32. If he had some time to spend in a waiting room and there were only two magazines to choose from, he would read *Arts and Decorations* rather than *The Scientific American*.

Variable 58. Loading, .31. He would prefer, if he were to marry, a wife who could achieve social prestige commanding admiration from others, one who is fundamentally spiritual in her attitude toward life, one who is gifted along artistic lines; rather than one who likes to stay home and keep house.

Variable 33. Loading, .31. He believes that a man who works in business for his living all week can best spend Sunday in trying to educate himself by reading serious books; rather than by trying to win at golf or racing, going to an orchestral concert, or hearing a really good sermon.

Variable 12. Loading, .30. He does not believe that contemporary charitable policies should be curtailed because they tend to undermine individual initiative.

In terms of the content of the variables as shown by the Allport-Vernon scoring key for the Test of Values, Factor B is heavily antipolitical and anti-economic. To a somewhat lesser degree content scored as social, aesthetic, and

theoretic is evident among the alternatives having positive correlation with Factor *B*. A number of the variables involving alternatives scored as religious have high loading on Factor *B*, notably variables 38, 18, and 3. However, these would not, in the author's opinion, usually be considered indicative of religious evaluative tendency. It is pertinent to note that none of these variables had significant projections on first-order Factor III, which had been interpreted as primarily antireligious in content.

Factor *B* resembles Lurie's Philistine factor (5). Detailed examination of the variables with high loadings on Factor *B* reveals no marked inconsistencies between their content and the term Philistine. However, the author feels that other designations are more appropriate and prefers to avoid the emotional tone of the term "Philistine."

Persons scoring high on Factor *B* may be characterized as idealistic, if the following restricted interpretation of the term is kept in mind. Idealistic, as we will use the term, characterizes individuals who evaluate highly concepts and beliefs which are aimed at the solution of the problem of the ideal social structure, the ideal manner of life, and who evaluate highly those aspects of our present day and of past cultures which they believe to be improvements over the usual, accepted, or conventional set of values. In line with this tendency, the individual high on Factor *B* appears to evaluate contemplation more highly than direct action. This latter tendency is further evidenced in aesthetic preferences that the more practical individual would regard as esoteric, involved, or "high brow."

It was indicated in foregoing discussion that items on the positive pole were, according to the scoring key for

the test, aesthetic, social, and theoretic in content. The comments in the preceding paragraph suggest a reasonable hypothesis as to the common component in high evaluation of these apparently different types of content. The first two of these three types of content suggest idealism with respect to cultural development of the individual, and with respect to human relations and the structure of society. Idealism, as we use the term, is logically related to high evaluation of theoretic items, since speculation, contemplation, or theorizing is a necessary activity of individuals who concern themselves with "how things should be" rather than accept "things as they are." There is the further suggestion that individuals scoring high on Factor *B* may evaluate more highly what they have acquired through the schools, through reading, and through contact with what might be termed cultural influences. They appear, in other words, to have been more heavily influenced by such aspects of our present-day culture than by the everyday world of practical affairs.

Individuals who are low scoring or on the negative pole of Factor *B* are characterized in part by a tendency toward low evaluation of variables with social, aesthetic, and theoretic content. Such individuals appear to be unconcerned with the problem of "how things should be" but accept the "things as they are" and evaluate favorably those things which are related to effective action within the framework of the accepted set of values of the dominant "we group" of our present-day culture. On a somewhat more tenuous basis, the author suggests that the low-scoring individuals, because they accept "things as they are" and are concerned with effective action within this framework, react with antagonism, lack of patience, lack

of understanding, or disparagement toward refusal to accept "things as they are."

The foregoing comments suggest the desirability of a bipolar designation for Factor *B*. Since a factor is a single dimension, the need for a bipolar type of description requires justification. In normal interpretation of factors it is assumed that individuals scoring low lack characteristics possessed to a greater degree by individuals scoring higher. With a bipolar description it is implied that individuals high on the factor are characterized by evaluative tendencies absent in those scoring low and conversely that those scoring low are characterized by evaluative tendencies absent in those scoring high on the factor. The author believes that the bipolar nature of Factor *B* results from the interaction of social groups with which the "Philistine" and "idealist" identify themselves—mutual disparagement tends to develop. Individuals possessing the characteristics of the high- or low-scoring group tend in consequence not to possess the evaluative tendencies characterizing those at the opposite pole.

As an additional point we might note that the content of the variables with high loading on Factor *B* suggests the presence of withdrawal tendencies on the part of both high- and low-scoring individuals. The high-scoring individuals appear to show tendencies toward withdrawal from active participation in the usual or dominant social structure. It appears possible, actually, that Factor *B* may show correlation with such personality factors as Moiser's (4) and Guilford's (3) social-introversion factor. On the other hand, individuals scoring low on Factor *B* appear to show withdrawal from "cultural" activities. It is difficult in both instances to decide whether the apparent withdrawal is evidence of preference for the more highly evaluated activities or whether actual withdrawal is indicated.

Whatever its exact nature, the author believes that Factor *B* is an important source of variance in the value judgments of human beings and that its significance carries over into areas beyond that of value judgments. Evidence in support of this statement may be found in the table of intercorrelation of occupational interest scores published by E. K. Strong (6). In this intercorrelation table, a cluster of occupational scores fitting the general definitions of

the two poles of Factor *B* can be readily selected. Equivalents of the positive pole may be found in scores for mathematician, artist, and the sciences. On the negative pole such occupations as sales manager and banker are to be found. The average intercorrelation within the positive cluster is .74, within the cluster at the negative pole .66, while the average between-cluster correlation is $-.65$. These data provide additional verification of the bipolar nature of Factor *B*, and add emphasis to the statement just made regarding the general significance of the dimension defined by Factor *B*.

The bipolar designation "Idealism" vs. "Practicality" will serve to identify Factor *B*.

Second-Order Factor C: Religiosity

Variable 53.¹¹ Loading, .83. He believes that one should guide one's conduct according to, or develop one's chief loyalties toward, one's religious faith; rather than toward one's ideals of beauty, one's business organizations and associates, society as a whole.

Variable 40.¹¹ Loading, .81. If he lived in a small town and had more than enough income for his needs, he would prefer to use it to endow the church to which he belongs; rather than apply it productively to industrial development, give it to a university for the development of scientific research, or devote it to hospitals.

Variable 26.¹¹ Loading, .72. Taking the Bible as a whole, he would prefer to regard it as a spiritual revelation rather than from the point of view of its beautiful mythology and literary style.

Variable 9. Loading, .57. He should prefer to read the headlines "Protestant Leaders To Consult On Reconciliation" rather than "Great Improvements In Market Conditions."

Variable 13.¹¹ Loading, .55. He does not believe that the evidence that has been impartially accumulated goes to show that the universe has evolved to its present state in accordance with mechanistic principles, so that there is no need to assume a first cause, cosmic purpose, or God behind it.

Variable 59.¹¹ Loading, .41. He would like to think of Leonardo da Vinci's "The Last Supper"

¹¹ Both statement and sign of factor loading have been reversed.

as expressing the highest spiritual tendencies and emotions; rather than as one of the most priceless and irreplaceable pictures ever painted, in relation to Leonardo's versatility and its place in history or as a masterpiece of design.

Variable 55. Loading, .41. Florence Nightingale interests and attracts him more than Napoleon, Henry Ford, or Charles Darwin.

Variable 54.¹¹ Loading, .40. He believes that one should guide one's conduct according to, or develop one's chief loyalties toward, one's religious faith, one's business organizations and associates, or society as a whole; rather than toward one's ideal of beauty.

Variable 32. Loading, .39. He believes that good government should aim at more aid for the poor, sick, and old, the introduction of more ethical principles into its policies and diplomacy, the establishment of a position of prestige and respect among nations; rather than the development of manufacturing and trade.

Variable 42.¹¹ Loading, .39. When he goes to the theatre, he enjoys most, as a rule, plays that treat the lives of great men, plays with a theme of human suffering and love, or problem plays that argue consistently for some point of view; rather than ballet or similar imaginative performances.

Variable 24.¹¹ Loading, .39. He feels that the world would be a much better place if we took to heart the teaching, "Lay not up for yourselves treasures upon earth . . . but lay up for yourselves treasures in heaven, where neither moth nor rust doth corrupt, and where thieves do not break through nor steal."

Variable 16.¹¹ Loading, .38. At an exposition he prefers to see automobiles rather than scientific apparatus or chemical products.

Variable 21.¹¹ Loading, .36. He feels that the aim of the churches at the present time should be to convey spiritual worship and a sense of communion with the highest; rather than to bring out charitable tendencies and to urge people to think of the good of others.

Variable 49.¹¹ Loading, .36. During his next summer vacation he would prefer to stay in some secluded part of the country where he could appreciate fine scenery, go in for a local tennis or other athletic tournament, or get experience in some new line of business; rather than to write and publish an original biographical essay or article.

Variable 28.¹¹ Loading, .36. If he were to choose a topic on which to write an essay, he would choose the role of church-going in religion rather than the defects of our present educational systems.

Variable 18. Loading, .34. He would prefer to hear a series of lectures on the comparative development of the great religious faiths rather than on the comparative merits of the forms of

government in Britain and in the United States.

Variable 11.¹¹ Loading, .34. When he visits a cathedral, he is more impressed by a prevailing sense of reverence and worship than by the architectural features and stained glass.

Variable 10.¹¹ Loading, .31. He would prefer to read the story "Threat to Constitutional Government in Germany by a Dictator" rather than "Physicists Make Important Discoveries Concerning the Structure of the Atom."

From Table 6 it will be noted that Factor C has its heaviest saturation in Factors IV and VI, the "antireligious" and the "humanitarian" factors. Examination of the above listing of the particular items or variables which have the highest loading on Factor C indicates that with the exception of Variables 34 and 35, most of the variables having high loading on Factor C also have high loading on Factor IV and appear to be religious in nature. The relation of Variable 34 to religious evaluative tendency is fairly obvious. In the case of Variable 58, which has marginal loading, the alternative, "fundamentally spiritual in her attitude toward life," very probably accounts for its loading on Factor C.

While Factor C appears to be religious in nature, the exact nature of the religious evaluative component involved and the exact manner in which it differs from Factor IV is not directly evident.

It appeared plausible to the author that Factor C would disappear or reduce to a factor of rather narrow content if Factor II and other of the first-order factors were rotated in an appropriate manner. A technique for accomplishing these rotations without successive recomputation of and refactoring of the intercorrelations of the primaries is not, to the author's knowledge, available.

D. DISCUSSION

In comparing the over-all results of

the factor analysis here reported with the purported content of the six scores for the Allport-Vernon test several points are evident. *Aesthetic, antireligious, theoretic, and social* factors resembling the original scores on the test were identified. Common factors with content having reasonably close resemblance to that of the *economic* and *political* scoring keys failed to appear. Items in these two evaluative scores are, however, prominent in the second-order general Factor B. Thus, it might be said that four of the evaluative scores give estimates of important factors resulting from the present analysis, and that the fifth and sixth may be combined to give an estimate of a single factor. *However, each of the groups of items in the four scoring keys which resemble factors resulting from this analysis was split into at least two factors.* For example, in addition to the general aesthetic factor, an "Interest in Fine Arts" primary trait was isolated; a factor labeled "Interest in Culture," involving a number of religious items, was isolated in addition to the antireligious factor; an "Interest in Physical Sciences" factor was obtained in addition to the theoretic factor. Thus, while the analysis resulted in factors having agreement with the scores of the test, it must also be stressed that the test scores are not factorially pure, but must be considered as an average of one factor accounting for a large proportion of its variance, and one or more additional but usually less important factors.¹²

In general, there was closer agreement with the scoring key of the test than with the results

¹² This comparison of the factor content with the content of the scoring keys is subject to some qualification, since two alternatives of each of fifteen four-choice items in Part II of the Allport-Vernon test were not included in the analysis.

of Lurie's analysis. The identification of a general factor heavily involving both the political and economic evaluative tendencies was, however, a common finding of both analyses, which was inconsistent with the content of the scoring keys. The absence in Lurie's analysis of a general aesthetic factor was the most marked discrepancy between the results of the two analyses, although a reinterpretation of Lurie's results did suggest that one of the factors which Lurie isolated but did not identify showed appreciable resemblance to the general aesthetic factor of the present analysis. While there might seem to be considerable superficial resemblance between Lurie's social and theoretic factors and Factors VI and IX of the present analysis, close examination of the component variables loaded in the factors indicated few identical or high similar variables and little basis for assuming identity of these two pairs of factors. Of the several factors in the two analyses having approximately synonymous names, only the religious factors found in the two analyses may be regarded with assurance as closely resembling each other. In addition, there were a considerable number of primary evaluative tendencies isolated in the present analysis with some confidence, over and above those identified by Lurie.

The fact that Lurie constructed a test in which evaluative tendency was stated directly rather than in relation to other possible evaluative tendencies may account in part for these differences in results. In addition, although Lurie's test was intended to duplicate the content of the Allport-Vernon test, there was appreciable difference in content as well as in form. Lurie's practice of adding several items to obtain a single variable probably added to the factorial complexity of his variables, and may have been a still additional factor partly responsible for differences between the results of his analysis and those reported in the present paper.

The general nature of the primary traits as they were isolated and interpreted in this paper does not support Spranger's theory of evaluative types insofar, at least, as the test scores conformed to that theory. An aspect of the interpretation of a number of the factors isolated is pertinent to this point and will bear emphasis in its own right. In interpreting several of the factors resulting from the present analysis, it appeared that the beliefs and evaluations stated in variables with high loadings

were most readily interpretable as characterizing a particular social group or institution. It seemed quite clear, for example, that a high or low score on Factor IV (antireligious) depends upon disagreement or agreement with the conventional religious beliefs of the Christian church. Factor VII seemed readily interpretable as an "Interest in Science" factor. If we regard science as an institution, differences between individuals scoring high and low on Factor VII can be ascribed to differences in their interest in or evaluation of science as an institution. Again, Factor X ("Rugged Individualism") appeared due to individual differences in acceptance or rejection of the evaluations inherent in the American tradition of rugged individualism.

Factor B, the most prominent in terms of the proportion of common-variance accounted for, was interpreted as representing the divergent viewpoints of the idealist and the practical man. It was postulated further that the apparent bipolar nature of the factor is related to formation of opposing "we groups" and resulting conflict between them. While in this instance the social structures postulated are not formal or institutionalized, it is believed that this interpretation of Factor B, if correct, supports the generalization stated above regarding the importance of social groups in understanding and interpreting the obtained factor structure.

VI. SUMMARY

The Allport-Vernon test, "A Study of Values," was administered to 200 college students. Tetrachoric intercorrelations of 60 of the items were computed, and eleven centroid factors were extracted and rotated to an oblique simple structure. Three second-order general

factors were determined from the intercorrelations of the oblique factors, and the loadings of the tests on the second-order factors computed.

The first-order factors described below were identified with varying degree of confidence.

Factor I. General Aesthetic Interest

Factor I is a general aesthetic factor which corresponds rather closely to the aesthetic measure obtained through the scoring key of the Test of Values.

Factor II. Interest in the Fine Arts

Factor II is less well established and less general than Factor I. It appears to involve group-held evaluations of the artistically inclined. The content seems restricted to the fine arts.

Factor III. Belief in "Culture"

Persons scoring high on Factor III can be characterized by a desire to appear "cultured." Their evaluations appear to have been determined by processes that might be described as intuitive or mystical. The content of items having positive correlation with Factor III tends not to involve apparent economic, biological, or social needs.

Factor IV. Antireligious Evaluative Tendency

Factor IV appeared to be definitely identifiable as antireligious in nature. Differences in reaction toward the conventional creed or indoctrination of the Christian church as an institution were postulated as the basis for the variance accounted for by Factor IV.

Factor V. Antiaggression

Factor V apparently has to do with individual differences in interests or evaluations relating to conflict, possibly to armed conflict in particular.

Factor VI. Humanitarian Tendency

The items of the Test of Values scored as social were well represented among those having high loading on Factor VI. Since the items highly loaded on Factor VI were largely concerned with social issues, the interpretation of Factor VI simply as "social" was not adequate. The personal or face-to-face social interests which appear to have been postulated in many of the items scored as social did not appear to be prominent in the content with high loading on Factor VI. A sympathetic or humanitarian rather than a rational basis for such interests in social issues seemed implied by the variables with high loading on Factor VI.

Factor VII. Interest in Science

Factor VII seemed definitely related to high evaluation of, or interest in, the physical sciences.

Factor VIII. Tendency toward Liberalism

Factor VIII resembled Factor VI in many respects. Persons high on Factor VIII, however, seemed characterized by a liberal viewpoint on social issues which seemed to be intellectual rather than emotional in origin.

Factor IX. Theoretic Interest

Factor IX seemed to correspond closely to the conception of theoretic interest indicated by Spranger's definition as evidenced in the scoring key for the Test of Values. It should be noted,

though, that items dealing with social issues and with interest in science were not highly loaded on Factor IX.

Factor X. "Rugged Individualism"

Tentatively, individual differences in acceptance or rejection of the American tradition of "rugged individualism" were postulated as the source of the variance accounted for by Factor X.

The meaningful interpretation of Factor XI was attempted. It was assumed to be residual in nature.

Of the three second-order factors isolated, Factor A did not account for a large proportion of the variance of the original matrix and was not interpreted, while Factor C seemed too similar to first-order Factor IV to add to the interpretation of the primary evaluative tendencies as described by the first-order factors. Factor B, on the other hand, appeared to be the most important source of variance in evaluative tendencies revealed by the analysis. Factor B was interpreted as a basic source of individual differences in evaluative tendencies which differentiated between *idealism* on the positive pole and *practicality* on the negative pole. The term "idealism" was used to describe an interest in, and high evaluation of, concepts and beliefs concerned with improvement of the social structure and the general manner of living of human beings. Practicality implied acceptance of "things as they are" with high evaluation of activities, concepts, and attitudes having to do with effective action within this framework.

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